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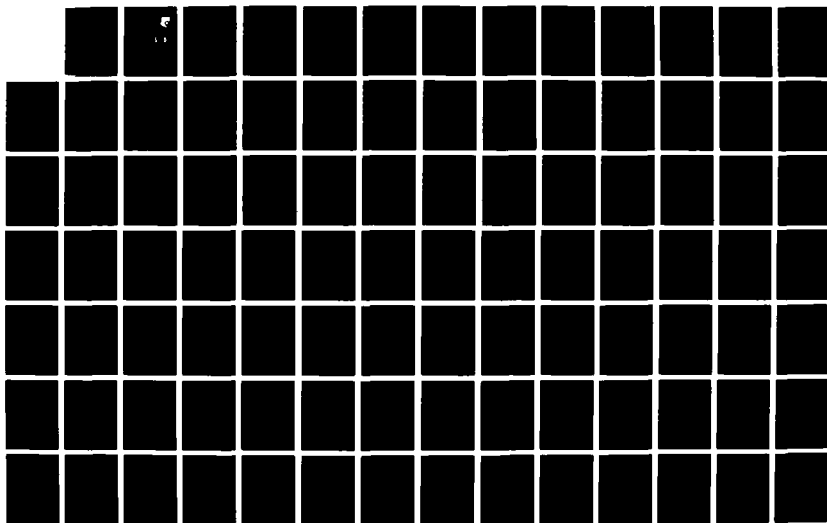
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**AFWAL-TR-86-4006
Volume VI
Part 7**



**INTEGRATED INFORMATION
SUPPORT SYSTEM (IISS)
Volume VI - Network Transaction Manager Subsystem
Part 7 - NTM Services Product Specification**

**General Electric Company
Production Resources Consulting
One River Road
Schenectady, New York 12345**

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**Final Report for Period 22 September 1980 - 31 July 1985
November 1985**

Approved for public release; distribution is unlimited.

PREPARED FOR:


**MATERIALS LABORATORY
AIR FORCE WRIGHT AERONAUTICAL LABORATORIES
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This report has been reviewed by the Office of Public Affairs (ASD/PA) and is releasable to the National Technical Information Service (NTIS). At NTIS, it will be available to the general public, including foreign nations.


This technical report has been reviewed and is approved for publication.



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7 Aug 86
DATE

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19. ABSTRACT (Continue on reverse if necessary and identify by block number) This product specification provides structure charts and module descriptions of the Network Transaction Manager System and Table Services. The Services provide an interface between application processes and the Message Processing Unit for the purpose of communication and the performance of table functions. Key words: computer aided manufacturing software.				
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PREFACE

This product specification covers the work performed under Air Force Contract F33615-80-C-5155 (ICAM Project 6201). This contract is sponsored by the Materials Laboratory, Air Force Systems Command, Wright-Patterson Air Force Base, Ohio. It was administered under the technical direction of Mr. Gerald C. Shumaker, ICAM Program Manager, Manufacturing Technology Division, through Project Manager, Mr. David Judson. The Prime Contractor was Production Resources Consulting of the General Electric Company, Schenectady, New York, under the direction of Mr. Alan Rubenstein. The General Electric Project Manager was Mr. Myron Hurlbut of Industrial Automation Systems Department, Albany, New York.

Certain work aimed at improving Test Bed Technology has been performed by other contracts with Project 6201 performing integrating functions. This work consisted of enhancements to Test Bed software and establishment and operation of Test Bed hardware and communications for developers and other users. Documentation relating to the Test Bed from all of these contractors and projects have been integrated under Project 6201 for publication and treatment as an integrated set of documents. The particular contributors to each document are noted on the Report Documentation Page (DD1473). A listing and description of the entire project documentation system and how they are related is contained in document FTR620100001, Project Overview.

The subcontractors and their contributing activities were as follows:

TASK 4.2

<u>Subcontractors</u>	<u>Role</u>
Boeing Military Aircraft Company (BMAC)	Reviewer.
D. Appleton Company (DACOM)	Responsible for IDEF support, state-of-the-art literature search.
General Dynamics/ Ft. Worth	Responsible for factory view function and information models.

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<u>Subcontractors</u>	<u>Role</u>
Illinois Institute of Technology	Responsible for factory view function research (IITRI) and information models of small and medium-size business.
North American Rockwell	Reviewer.
Northrop Corporation	Responsible for factory view function and information models.
Pritsker and Associates	Responsible for IDEF2 support.
SofTech	Responsible for IDEFO support.

TASKS 4.3 - 4.9 (TEST BED)

<u>Subcontractors</u>	<u>Role</u>
Boeing Military Aircraft Company (BMAC)	Responsible for consultation on applications of the technology and on IBM computer technology.
Computer Technology Associates (CTA)	Assisted in the areas of communications systems, system design and integration methodology, and design of the Network Transaction Manager.
Control Data Corporation (CDC)	Responsible for the Common Data Model (CDM) implementation and part of the CDM design (shared with DACOM).
D. Appleton Company (DACOM)	Responsible for the overall CDM Subsystem design integration and test plan, as well as part of the design of the CDM (shared with CDC). DACOM also developed the Integration Methodology and did the schema mappings for the Application Subsystems.

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Subcontractors

Role

Digital Equipment
Corporation (DEC)

Consulting and support of the
performance testing and on DEC
software and computer systems
operation.

McDonnell Douglas
Automation Company
(McAuto)

Responsible for the support and
enhancements to the Network
Transaction Manager Subsystem
during 1984/1985 period.

On-Line Software
International (OSI)

Responsible for programming the
Communications Subsystem on the
IBM and for consulting on the
IBM.

Rath and Strong Systems
Products (RSSP) (In 1985
became McCormack & Dodge)

Responsible for assistance in
the implementation and use of
the MRP II package (PIOS) that
they supplied.

SofTech, Inc.

Responsible for the design and
implementation of the Network
Transaction Manager (NTM) in
1981/1984 period.

Software Performance
Engineering (SPE)

Responsible for directing the
work on performance evaluation
and analysis.

Structural Dynamics
Research Corporation
(SDRC)

Responsible for the User
Interface and Virtual Terminal
Interface Subsystems.

Other prime contractors under other projects who have
contributed to Test Fed Technology, their contributing
activities and responsible projects are as follows:

Contractors

ICAM Project

Contributing Activities

Boeing Military
Aircraft Company
(BMAC)

1701, 2201,
2202

Enhancements for IBM
node use. Technology
Transfer to Integrated
Sheet Metal Center
(ISMC).

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<u>Contractors</u>	<u>ICAM Project</u>	<u>Contributing Activities</u>
Control Data Corporation (CDC)	1502, 1701	IISS enhancements to Common Data Model Processor (CDMP).
D. Appleton Company (DAGOM)	1502	IISS enhancements to Integration Methodology.
General Electric	1502	Operation of the Test Bed and communications equipment.
Hughes Aircraft Company (HAC)	1701	Test Bed enhancements.
Structural Dynamics Research Corporation (SDRC)	1502, 1701, 1703	IISS enhancements to User Interface/Virtual Terminal Interface (UI/VTI).
Systran	1502	Test Bed enhancements. Operation of Test Bed.

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SECTION 1

SCOPE

1.1 Identification

This specification establishes the 'as built' design of the Software Services component of the Network Transaction Manager Subsystem.

1.2 Functional Summary

The Network Transaction Manager (NTM) Subsystem provides the control and support services to application processes that are grouped together logically in clusters called Application Process Cluster (APCs). These application processes communicate with one another by sending messages via the NTM. The NTM delivers these messages to the destination application processes while also providing other services for the APs such as message pairing, AP initiation, and message queuing.

SECTION 2

DOCUMENTS

2.1 Reference Documents

The following pertinent reference materials are available at the ICAM Program Office.

1. Interim Reports
2. Life Cycle Documents
 - (a) ITR620150002U Project Scope
 - (b) PMP620150000 Master Plan and Schedule
 - (c) SAD620150000 State-of-the-Art Review
 - (d) SRD620140000 System Requirements Document
 - (e) SDS620140000 System Design Specifications
 - (f) DS6201420000 Development Specification - Network Transaction Manager Subsystem

The following reference materials are available from Digital Equipment Corporation.

- (a) VAX/VMS I/O User's Guide (Volume 1), Order No. AA-M540B-TE
- (b) VAX/VMS I/O User's Guide (Volume 2), Order No. AA-M541B-TE
- (c) VAX COBOL Language Reference Manual, Order No. AA-H631C-TE
- (d) VAX-11 FORTRAN Language Reference Manual, OrderNo. AA-DO34C-TE

Other reference materials are as follows.

- (a) International Organization for Standardization, Open Systems Interconnection.

Information Processing Systems - Basic Reference Model, TC 97/16 N 719

- (b) International Organization for Standardization, Open Systems Interconnection Draft, Connection-Oriented Transport Service Definition TC 97/16 N 860
- (c) International Organization for Standardization Open Systems Interconnection, Draft, Connection-Oriented Transport Protocol Specification Version 1.2, TC 97/16 N 861
- (d) International Organization for Standardization Open Systems Interconnection, Draft, Connection-Oriented Session Protocol Definition TC 97/16 N 856
- (e) National Bureau of Standards, Specification of the Transport Protocol, Volume 2: Basic Class Protocol, Draft Report, September 1981, Report No. ICST/HLNP-81-12
- (f) National Bureau of Standards, Specification of the Transport Protocol, Volume 3: Extended Class Protocol, Draft Report, September 1981, Report No. ICST/HLNP-81-13
- (g) National Bureau of Standards, Specification of the Transport Protocol, Volume 4: Network Interfaces, Draft Report, September 1981, Report No. ICST/HLNP-81-14

2.2 Terms And Abbreviations

1. Interhost Communication Primitives (IHC's) - A set of routines used by the NTM to interface to the operating system or to other operating systems which have an NTM running. They are always system dependent.
2. Interprocess Communication Primitives (IPC's) - A set of routines used to communicate between two processes on the same computer. They are always system dependent.

SECTION 3

REQUIREMENTS

3.1 Structural Descriptions

The NTM Services Modules are the routines that are bound with IISS APs to provide the management of the AP's communication with the IISS.

3.2 Functional Flow Description

The logic and functional flow for the services is described in the Development Specification (DS 620142000). The NTM Services can be grouped according to their basic function in the following way:

The NTM Communication Initiation Routines:

- INICOM (used by the COMM APs for initiation)
- INITAL (used for initiation by all IISS APs except COMM and the UI)
- INITEX (used by the UI AP for initiation)
- LOGON (used by the UI to send user logon information to the NTM)

The NTM Communication Routines:

- CHGROL (used by the UI to tell the NTM about a user's role change)
- CHKMSG (used as a check to determine whether a message has arrived for the AP)
- GDACK (used to acknowledge guaranteed delivery messages)
- GDSSEN (used to send guaranteed delivery messages)
- ISEND (used to send a message that will specifically cause the initiation of a new instance of an IISS AP)
- NSEND (used to send message to other IISS APs)
- QSEND (used by Queue-Server APs to send messages back to the AP whose message was just received)
- RCV (used to receive any messages that may have been sent by other IISS APs)

- SIGERR (used to send an error message to both the user of this AP and the NTM Monitor)
- TSTMOD (used by the UI to signal message filtering needs)

NTM Status Services

- GETUSR (used to get user information, original source, and original logical channel)
- WTHST (used to determine host name where requested AP resides)

NTM Termination Services

- LOGOFF (used by the UI to inform the NTM of a user logoff)
- TRMNAT (used by all IISS APs to terminate their communication connection to the NTM)
- TRMNAX (used by the COMM APs to terminate their communication connection to the NTM)

3.3 Interfaces

The Network Transaction Manager maintains communications with any other process through mailboxes. The mailboxes are managed by the Interprocess Communication Primitives (IPC's).

Communications with the remote computer is accomplished through the Communication sub-system process which will be running when there are other hosts to communicate with.

3.4 Program Interrupts

Many NTM Services are interrupt driven with interrupts coming either from the IPC's on behalf of an NTM MPU. Waiting for these interrupts is performed by one of the IPC wait primitives. If a response must be received within a particular time interval, the IPC's associated with timing are used along with one of the wait's.

3.5 Timing and Sequence Description

The NTM does not depend on any particular timing sequences.

3.6 Special Control Features

The Network Transaction Manager Subsystem does not include any special control features as defined in the ICAM Documentation Standards manual.

3.7 Storage Allocation

3.7.1 Data Base Definition

3.7.1.1 File Description

All file handling is done by the Message Processing Units and not by the NTM Services themselves.

3.7.1.2 Table Description

The tables that are used by multiple services are described in the Include files (Section 3.10.9). The local data is also described in the System Programmer's Manual (SUM620142000).

3.7.1.3 Item and Constant Description

Described in the DS.

3.7.2 CPC Relationship

3.8 Object Code Creation

The generic portion of NTM is written in COBOL and 'C'. This has been successfully compiled on a VAX 11/780 under VMS (Rel 2.0), an IBM 3084 under MVS (Rel 1.8), and a Honeywell Level 6 under Mod 400 (Rel 1.2).

The minimum computer hardware and software required to create and run NTM in the IISS environment is documented in the Installation Guide for IISS on the VAX and in the Installation Guide for IISS on the IBM.

3.9 Adaption Data

The command procedures to create the IISS AP executables such that they contain the NTM Services are specific to each computer and can be found under Software Configuration Management.

3.10 Detail Design Description

The upcoming program details were derived from all modules that were selected when the following Documentation Group(s) was chosen:

NTMSERV

3.10.1 Main Program List

The following is a list of all "Main Programs" which are modules that are not called by any other module being documented here. These modules are either program entry points or, if they are hooked into another set of programs via subroutine calls, they are the points the external programs can call and therefore enter through. To differentiate between the two types of entry points, look at the individual Module Documentation (section 3.10.8) and look at Module Type for each of the Main Program modules listed. Note whether the routine is a Program, Subroutine, or Function. If it is a Program, it is truly a main program entry point. If not, then it is merely called by other programs not being documented here.

NTM/SERV Main Program List

Module Name -----	Purpose -----
ASCTIM	CALLED BY MPU'S TO GET THE SYSTEM TIME AS AN ASCII STRING.
CHGROL2	CHANGE THE ROLE UNDER WHICH A USER LOGGED ON.
CHKMSG2	TO CHECK FOR MESSAGES FROM OTHER APS IN THE IISS.
ERRAPI	WRITES ERROR RECORD TO ERROR-LOG FILE ERRAPI.DAT.
FILGEN	INTERFACE TO THE FILE NAME QUEUE SERVER.
GDACK2	SENDS GD ACK MESSAGE TO LOCAL MPU.
GDSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.
GETTIM	GET THE SYSTEM TIME AS A BINARY STRING.
GETUSR2	RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL, AND USER NAME.
INICOM2	INITIALIZE AP'S CONNECTION TO THE IISS.
INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
INSTNC2	GET THE SYSGEN INSTANCE NUMBER.
ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
LOGOFF2	SENDS LOGOFF MESSAGE TO THE MONITOR AP.
LOGON2	SENDS LOGON MESSAGE TO THE MONITOR AP.

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NTM/SERV Main Program List

Module Name -----	Purpose -----
MBXLG2	WRITES MAILBOX DATA TO ERRLOG-FILE MBXLG2.
MBXLOG	WRITES MAILBOX DATA TO ERRLOG-FILE MBXLOG.
QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
RCLE	REMOTE COMPILE AND LINK EXPERT DRIVER
SIGABT2	SIGNAL THE MPU TO ABORT A CHILD AP
SIGERR	CALL SIGERR2
SNDRCLE	REMOTE COMPILE AND LINK EXPERT CALLING SERVICE
TRMNAX	CALL TRMNAX2
TSTMOD	CALL COBOL ROUTINE TSTMOD2
WTHST	CALL WTHST2

3.10.2 Module List

The following is a list of all the modules being documented here along with their purpose. Each module has a unique name, no matter what language it was written in.

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NTM/SERV Module List

Module Name -----	Purpose -----
ASCTIM	CALLED BY MPU'S TO GET THE SYSTEM TIME AS AN ASCII STRING.
CHGROL2	CHANGE THE ROLE UNDER WHICH A USER LOGGED ON.
CHKMSG2	TO CHECK FOR MESSAGES FROM OTHER APS IN THE IISS .
ERRAPI	WRITES ERROR RECORD TO ERRLOG FILE ERRAPI.DAT.
FILGEN	INTERFACE TO THE FILE NAME QUEUE SERVER.
GDACK2	SENDS GD ACK MESSAGE TO LOCAL MPU.
GDSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.
GETTIM	GET THE SYSTEM TIME AS A BINARY STRING.
GETUSR2	RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL, AND USER NAME.
INICOM2	INITIALIZE AP'S CONNECTION TO THE IISS.
INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
INSTNC2	GET THE SYSGEN INSTANCE NUMBER.
ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
LOGOFF2	SENDS LOGOFF MESSAGE TO THE MONITOR AP.
LOGON2	SENDS LOGON MESSAGE TO THE MONITOR AP.

NTM/SERV Module List

Module Name -----	Purpose -----
MBXLG2	WRITES MAILBOX DATA TO ERRLOG FILE MBXLG2.
MBXLOG	WRITES MAILBOX DATA TO ERRLOG FILE MBXLOG.
NSEND2	SEND MESSAGE TO AN AP IN THE IISS.
POSTCOM	WRITE "CLEAN-UP" CONTROL CARDS TO THE COMMAND FILE.
PRECOM	WRITE "SET-UP" CONTROL CARDS TO THE COMMAND FILE.
QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
RCLE	REMOTE COMPILE AND LINK EXPERT DRIVER.
RCLFILE	DO COMMAND FILE OPERATIONS FOR RCLE.
RCV2	RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .
SIGABT2	SIGNAL THE MPU TO ABORT A CHILD AP
SIGERR	CALL SIGERR2
SIGERR2	SENDS AN ERROR MESSAGE TO MONITOR AND TO ORIGINAL SOURCE.
SNDRCLE	REMOTE COMPILE AND LINK EXPERT CALLING SERVICE
TRMNAT	CALL TRMNAT2
TRMNAT2	TERMINATE AN AP'S CONNECTION TO THE IISS.
TRMNAX	CALL TRMNAX2
TRMNAX2	TERMINATE COMM'S CONNECTION TO THE IISS.
TSTM0D	CALL COBOL ROUTINE TSTM0D2

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NTM/SERV Module List

Module Name -----	Purpose -----
TSTMOD2	SET/RESET THE TEST-MODE-FLAG.
WTHST	CALL WTHST2
WTHST2	RETURNS THE NAME OF THE HOST ON WHICH AN AP RESIDES.

3.10.3 External Routines List

The following is a list of all routines or functions not documented here that are called by modules that are documented here. The first caller, in alphabetical order, is listed as well. The specification in which any module is documented may be found in the Module Documentation Index (Document Number CM 620100001). See section 3.10.6 for a list of the modules that call each of these external routines.

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NTM/SERV External Routines List

Module Name -----	First User -----
APACCT	WHTHST
CNLTIM	ISEND2
CRTMBX	INICOM2
DELMBX	TRMNAT2
ENDRUN	TRMNAX2
ERRPRO	SIGERR2
GETMSG	RCV2
GETNAM	INITEX2
INITAL	RCLE
ISEND	SNDRCLE
LOCKEF	INITAL2
NSEND	FILGEN
RCV	RCLE
RCVMSG	RCV2
RELEVB	INITIL2
SETTIM	INITEX2
SNDMSG	TRMNAT2
SYSSASCTIM	ASCTIM
SYSSCREPRC	RCLE
SYSSGETJPI	RCLE
SYSSGETTIM	GETTIM
WAIT01	INITIL2
WAIT02	QSEND2

3.10.4 Include File List

The following is a list of all include files called in by modules being documented here. Each include file has a unique name regardless of the language being used. The purpose of each include file is listed as well. A more complete description of each include file is given in section 3.10.9. The purpose listed is the one that is in the source code of the include file.

A purpose of "**** PURPOSE NOT FOUND BY STRIPPER ****" indicates that a purpose statement was not written into the include file itself. The most common reason for this is that the include file comes from system libraries that were not developed by the project, such as 'C' libraries that are provided with the 'C' compiler.

See section 3.10.6 for a set of lists which show all the modules which call in each of these include files.

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NTM/SERV Include File List

File Name	Purpose
-----	-----
ADMSGH	THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
ALMSGH	INITIALIZE LOCAL NTM-MESSAGE VARIABLES.
APCNM1	APC GLOBAL NAME DATA.
APCNM2	APC GLOBAL NAME DATA.
APIEBV	NTM EVENT BLOCKS.
APIINI	FOR INITIATION PURPOSES
APILCL	THE APIS COMMON LOCAL DATA.
APINME	API GLOBAL NAME DATA.
BUFAPI	API GLOBAL BUFFER DATA.
COMAPC	HARD CODED APC NAMES FOR COMM.
ERRPRO	PROCESS ERROR INCLUDE FILE.
INICMD	INITIALIZATION MESSAGE FORMAT.
MSGSTR	MESSAGE FORMAT INCLUDE FILE.
RETSTR	THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
SRVCD2	SERVICE CODES FOR THE NTM SERVICE ROUTINES.
SRVCD5	SERVICE CODES FOR THE NTM SERVICE ROUTINES.
SRVRET	NTM SERVICE STATUS CODES.
TSTMDE	TEST MODE FLAG.

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3.10.5 Where Include File Used List

The following lists each include file from 3.10.4 and all the modules documented in this specification which include them. The purpose of each module is listed as well.

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NTM/SERV Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
ADMSGH	TRMNAT2	TERMINATE AN AP'S CONNECTION TO THE IISS.
	TRMNAX2	TERMINATE COMM'S CONNECTION TO THE IISS.
ALMSGH	INICOM2	INITIALIZE AP'S CONNECTION TO THE IISS.
	INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
	INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
APCNM1	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
APCNM2	INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
	INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
APIEBV	CHGROL2	CHANGE THE ROLE UNDER WHICH A USER LOGGED ON.
	CHKMSG2	TO CHECK FOR MESSAGES FROM OTHER APS IN THE IISS .
	GDACK2	SENDS GD ACK MESSAGE TO LOCAL MPU.

NTM/SERV Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	GDSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.
	GETUSR2	RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL, AND USER NAME.
	INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
	INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
	ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
	LOGOFF2	SENDS LOGOFF MESSAGE TO THE MONITOR AP.
	LOGON2	SENDS LOGON MESSAGE TO THE MONITOR AP.
	NSEND2	SEND MESSAGE TO AN AP IN THE IISS.
	QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
	RCLE	REMOTE COMPILE AND LINK EXPERT DRIVER
	RCV2	RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .
	SIGABT2	SIGNAL THE MPU TO ABORT A CHILD AP
	SIGERR	CALL SIGERR2
	SIGERR2	SENDS AN ERROR MESSAGE TO MONITOR AND TO ORIGINAL SOURCE.
	TRMNAT	CALL TRMNAT2
	TRMNAT2	TERMINATE AN AP'S CONNECTION TO THE IISS.
	TSTMOD	CALL COBOL ROUTINE TSTMOD2
	WTHST	CALL WTHST2
	WTHST2	RETURNS THE NAME OF THE HOST ON WHICH AN AP RESIDES.
APIINI		
	INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
	INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.

NTM/SERV Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
APILCL		
	CHKMSG2	TO CHECK FOR MESSAGES FROM OTHER APS IN THE IISS .
	GDACK2	SENDS GD ACK MESSAGE TO LOCAL MPU.
	GDSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.
	INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
	INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
	ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
	NSEND2	SEND MESSAGE TO AN AP IN THE IISS.
	QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
	RCLE	REMOTE COMPILE AND LINK EXPERT DRIVER
	RCV2	RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .
	SIGABT2	SIGNAL THE MPU TO ABORT A CHILD AP
	SIGERR2	SENDS AN ERROR MESSAGE TO MONITOR AND TO ORIGINAL SOURCE.
	TRMNAT2	TERMINATE AN AP'S CONNECTION TO THE IISS.
	TRMNAX2	TERMINATE COMM'S CONNECTION TO THE IISS.

APINME		
	CHGROL2	CHANGE THE ROLE UNDER WHICH A USER LOGGED ON.
	CHKMSG2	TO CHECK FOR MESSAGES FROM OTHER APS IN THE IISS .
	GDACK2	SENDS GD ACK MESSAGE TO LOCAL MPU.
	GDSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.

NTM/SERV Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	GETUSR2	RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL, AND USER NAME.
	INITAL2	INITIALIZE AP'S CONNECTION TO THE T1V MPU.
	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
	INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
	ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
	LOGOFF2	SENDS LOGOFF MESSAGE TO THE MONITOR AP.
	LOGON2	SENDS LOGON MESSAGE TO THE MONITOR AP.
	NSEND2	SEND MESSAGE TO AN AP IN THE IISS.
	QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
	RCV2	RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .
	SIGABT2	SIGNAL THE MPU TO ABORT A CHILD AP
	SIGERR	CALL SIGERR2
	SIGERR2	SENDS AN ERROR MESSAGE TO MONITOR AND TO ORIGINAL SOURCE.
	TRMNAT	CALL TRMNAT2
	TRMNAT2	TERMINATE AN AP'S CONNECTION TO THE IISS.
	WTHST	CALL WTHST2
	WTHST2	RETURNS THE NAME OF THE HOST ON WHICH AN AP RESIDES.
BUFAP1	CHGROL2	CHANGE THE ROLE UNDER WHICH A USER LOGGED ON.
	CHKMSG2	TO CHECK FOR MESSAGES FROM OTHER APS IN THE IISS .
	GDACK2	SENDS GD ACK MESSAGE TO LOCAL MPU.
	GDSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.
	GETUSR2	RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL, AND USER NAME.
	INITAL2	INITIALIZE AP'S CONNECTION TO THE T1V MPU.

NTM/SERV Where-include-file-used List

Include File	Module Name	Module Purpose
-----	-----	-----
	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
	INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
	ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
	LOGOFF2	SENDS LOGOFF MESSAGE TO THE MONITOR AP.
	LOGON2	SENDS LOGON MESSAGE TO THE MONITOR AP.
	NSEND2	SEND MESSAGE TO AN AP IN THE IISS.
	QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
	RCV2	RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .
	SIGABT2	SIGNAL THE MPU TO ABORT A CHILD AP
	SIGERR	CALL SIGERR2
	SIGERR2	SENDS AN ERROR MESSAGE TO MONITOR AND TO ORIGINAL SOURCE.
	WTHST	CALL WTHST2
	WTHST2	RETURNS THE NAME OF THE HOST ON WHICH AN AP RESIDES.
COMAPC	TRMNAX2	TERMINATE COMM'S CONNECTION TO THE IISS.
ERRPRO	CHGROL2	CHANGE THE ROLE UNDER WHICH A USER LOGGED ON.
	CHKMSG2	TO CHECK FOR MESSAGES FROM OTHER APS IN THE IISS.
	FILGEN	INTERFACE TO FILE NAME QUEUE SERVER.
	GDACK2	SENDS GD ACK MESSAGE TO LOCAL MPU.
	GDSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.

NTM/SERV Where-include-file-used List

Include File	Module Name	Module Purpose
-----	-----	-----
	GETUSR2	RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL, AND USER NAME.
	INICOM2	INITIALIZE AP'S CONNECTION TO THE IISS.
	INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
	INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
	ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
	LOGOFF2	SENDS LOGOFF MESSAGE TO THE MONITOR AP.
	LOGON2	SENDS LOGON MESSAGE TO THE MONITOR AP.
	NSEND2	SEND MESSAGE TO AN AP IN THE IISS.
	QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
	RCLE	REMOTE COMPILE AND LINK EXPERT DRIVER
	RCV2	RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .
	SIGABT2	SIGNAL THE MPU TO ABORT A CHILD AP
	SIGERR2	SENDS AN ERROR MESSAGE TO MONITOR AND TO ORIGINAL SOURCE.
	TRMNAT2	TERMINATE AN AP'S CONNECTION TO THE IISS.
	TRMNAX2	TERMINATE COMM'S CONNECTION TO THE IISS.
	WTHST2	RETURNS THE NAME OF THE HOST ON WHICH AN AP RESIDES.
INICMD	INICOM2	INITIALIZE AP'S CONNECTION TO THE IISS.
MSGSTR	CHKMSG2	TO CHECK FOR MESSAGES FROM OTHER APS IN THE IISS .
	GDSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.

NTM/SERV Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
	NSEND2	SEND MESSAGE TO AN AP IN THE IISS.
	QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
	RCV2	RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .

RETSTR

CHGROL2	CHANGE THE ROLE UNDER WHICH A USER LOGGED ON.
CHKMSG2	TO CHECK FOR MESSAGES FROM OTHER APS IN THE IISS .
GDACK2	SENDS GD ACK MESSAGE TO LOCAL MPU.
GDSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.
GETUSR2	RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL, AND USER NAME.
INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
LOGOFF2	SENDS LOGOFF MESSAGE TO THE MONITOR AP.
LOGON2	SENDS LOGON MESSAGE TO THE MONITOR AP.
NSEND2	SEND MESSAGE TO AN AP IN THE IISS.
QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
RCLE	REMOTE COMPILE AND LINK EXPERT DRIVER
RCV2	RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .
SIGABT2	SIGNAL THE MPU TO ABORT A CHILD AP
SIGERR2	SENDS AN ERROR MESSAGE TO MONITOR AND TO ORIGINAL SOURCE.
TRMNAT2	TERMINATE AN AP'S CONNECTION TO THE IISS.

NTM/SERV Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
--------------------------	-------------------------	----------------------------

TRMNAX2	TERMINATE COMM'S CONNECTION TO THE IISS.
WHTHST2	RETURNS THE NAME OF THE HOST ON WHICH AN AP RESIDES.

SRVCD2

CHGROL2	CHANGE THE ROLE UNDER WHICH A USER LOGGED ON.
GDACK2	SENDS GD ACK MESSAGE TO LOCAL MPU.
GETUSR2	RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL, AND USER NAME.
LOGOFF2	SENDS LOGOFF MESSAGE TO THE MONITOR AP.
LOGON2	SENDS LOGON MESSAGE TO THE MONITOR AP.
SIGABT2	SIGNAL THE MPU TO ABORT A CHILD AP
SIGERR2	SENDS AN ERROR MESSAGE TO MONITOR AND TO ORIGINAL SOURCE.
TSTMOD2	SET/RESET THE TEST-MODE-FLAG.
WHTHST2	RETURNS THE NAME OF THE HOST ON WHICH AN AP RESIDES.

SRVCDS

CHKMSG2	TO CHECK FOR MESSAGES FROM OTHER APS IN THE IISS .
GDSSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.
INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
INITIL2	INITIALIZE AN AP's CONNECTION TO AN AP SELECTED MPU.
ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
NSEND2	SEND MESSAGE TO AN AP IN THE IISS.
QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.

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NTM/SERV Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	RCV2	RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .
	TRMNAT2	TERMINATE AN AP'S CONNECTION TO THE IISS.
	TRMNA2	TERMINATE COMM'S CONNECTION TO THE IISS.
SRVRET	CHGROL2	CHANGE THE ROLE UNDER WHICH A USER LOGGED ON.
	FILGEN	INTERFACE TO FILE NAME QUEUE SERVER.
	GDACK2	SENDS GD ACK MESSAGE TO LOCAL MPU.
	GETUSR2	RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL, AND USER NAME.
	LOGOFF2	SENDS LOGOFF MESSAGE TO THE MONITOR AP.
	LOGON2	SENDS LOGON MESSAGE TO THE MONITOR AP.
	RCLE	REMOTE COMPILE AND LINK EXPERT DRIVER
	SIGABT2	SIGNAL THE MPU TO ABORT A CHILD AP
	SIGERR2	SENDS AN ERROR MESSAGE TO MONITOR AND TO ORIGINAL SOURCE.
	SNDRCLE	REMOTE COMPILE AND LINK EXPERT CALLING SERVICE
	WTHST2	RETURNS THE NAME OF THE HOST ON WHICH AN AP RESIDES.
TSTMDE	CHKMSG2	TO CHECK FOR MESSAGES FROM OTHER APS IN THE IISS .
	GETUSR2	RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL, AND USER NAME.
	INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
	INITIL2	INITIALIZE AN AP's CONNECTION TO AN AP SELECTED MPU.
	LOGON2	SENDS LOGON MESSAGE TO THE MONITOR AP.

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NTM/SERV Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	RCV2	RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .
	SIGABT2	SIGNAL THE MPU TO ABORT A CHILD AP
	TSTMOD2	SET/RESET THE TEST-MODE-FLAG.
	WTHST2	RETURNS THE NAME OF THE HOST ON WHICH AN AP RESIDES.

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3.10.6 Where External Routine Used List

The following lists each external function or routine listed in 3.10.3 and all the documented modules which call it. The purpose of each module is listed as well.

NTM/SERV Where-external-routine-used List

System Module	Module Name	Module Purpose
-----	-----	-----
APACCT	SIGERR	CALL SIGERR2
	TRMNAT	CALL TRMNAT2
	TRMNAX	CALL TRMNAX2
	TSTMOD	CALL COBOL ROUTINE TSTMOD2
	WTHST	CALL WTHST2
CNLTIM	GDSSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.
	ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
	NSEND2	SEND MESSAGE TO AN AP IN THE IISS.
	QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
CRTMBX	INICOM2	INITIALIZE AP'S CONNECTION TO THE IISS.
	INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
	INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
DELMBX	INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
	INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
	TRMNAT2	TERMINATE AN AP'S CONNECTION TO THE IISS.

NTM/SERV Where-external-routine-used List

System Module	Module Name	Module Purpose
-----	-----	-----
ENDRUN	TRMNAT2	TERMINATE AN AP'S CONNECTION TO THE IISS.
	TRMNAX2	TERMINATE COMM'S CONNECTION TO THE IISS.
ERRPRO	CHGROL2	CHANGE THE ROLE UNDER WHICH A USER LOGGED ON.
	CHKMSG2	TO CHECK FOR MESSAGES FROM OTHER APS IN THE IISS .
	FILGEN	INTERFACE TO THE FILE NAME QUEUE SERVER.
	GDACK2	SENDS GD ACK MESSAGE TO LOCAL MPU.
	GDSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.
	GETUSR2	RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL, AND USER NAME.
	INICOM2	INITIALIZE AP'S CONNECTION TO THE IISS.
	INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
	INITIL2	INITIALIZE AN AP's CONNECTION TO AN AP SELECTED MPU.
	ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
	LOGOFF2	SENDS LOGOFF MESSAGE TO THE MONITOR AP.
	LOGON2	SENDS LOGON MESSAGE TO THE MONITOR AP.
	NSEND2	SEND MESSAGE TO AN AP IN THE IISS.
	QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
	RCLE	REMOTE COMPILE AND LINK EXPERT DRIVER
	RCV2	RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .
	SIGABT2	SIGNAL THE MPU TO ABORT A CHILD AP
	SIGERR2	SENDS AN ERROR MESSAGE TO MONITOR AND TO ORIGINAL SOURCE.
	TRMNAT2	TERMINATE AN AP'S CONNECTION TO THE IISS.
	TRMNAX2	TERMINATE COMM'S CONNECTION TO THE IISS.
	WTHST2	RETURNS THE NAME OF THE HOST ON WHICH AN AP RESIDES.

NTM/SERV Where-external-routine-used List

System Module -----	Module Name -----	Module Purpose -----
GETMSG	CHKMSG2	TO CHECK FOR MESSAGES FROM OTHER APS IN THE IISS .
	GDSSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.
	INICOM2	INITIALIZE AP'S CONNECTION TO THE IISS.
	INITAL2	INITIALIZE AP'S CONNECTION TO THE T1V MPU.
	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
	INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
	ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
	NSEND2	SEND MESSAGE TO AN AP IN THE IISS.
	QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
	RCV2	RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .
GETNAM	INICOM2	INITIALIZE AP'S CONNECTION TO THE IISS.
	INITAL2	INITIALIZE AP'S CONNECTION TO THE T1V MPU.
	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
	INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
	MBXLOG	PURPOSE NOT KNOWN - ACTIVE CODE.
	TRMNAX2	TERMINATE COMM'S CONNECTION TO THE IISS.
INITAL	RCLE	REMOTE COMPILE AND LINK EXPERT DRIVER

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NTM/SERV Where-external-routine-used List

System Module -----	Module Name -----	Module Purpose -----
ISEND	SNDRCLE	REMOTE COMPILE AND LINK EXPERT CALLING SERVICE
LOCKEF	INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
NSEND	FILGEN RCLE	INTERFACE TO THE FILE NAME QUEUE SERVER REMOTE COMPILE AND LINK EXPERT DRIVER
RCV	FILGEN RCLE	INTERFACE TO THE FILE NAME QUEUE SERVER REMOTE COMPILE AND LINK EXPERT DRIVER
RCVMSG	CHKMSG2 GDSEND2 INICOM2 INITAL2 INITEX2 INITIL2 ISEND2 NSEND2	TO CHECK FOR MESSAGES FROM OTHER APS IN THE IISS . SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING. INITIALIZE AP'S CONNECTION TO THE IISS. INITIALIZE AP'S CONNECTION TO THE TIV MPU. INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU. INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU. SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP. SEND MESSAGE TO AN AP IN THE IISS.

NTM/SERV Where-external-routine-used List

System Module -----	Module Name -----	Module Purpose -----
	QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
	RCV2	RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .
RELEVB		
	GDSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.
	INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
	INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
	ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
	NSEND2	SEND MESSAGE TO AN AP IN THE IISS.
	QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
	TRMNAT2	TERMINATE AN AP'S CONNECTION TO THE IISS.
	TRMNAX2	TERMINATE COMM'S CONNECTION TO THE IISS.
SETTIM		
	GDSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.
	INICOM2	INITIALIZE AP'S CONNECTION TO THE IISS.
	INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
	INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
	ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
	NSEND2	SEND MESSAGE TO AN AP IN THE IISS.
	QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
	RCLE	REMOTE COMPILE AND LINK EXPERT DRIVER
	TRMNAT2	TERMINATE AN AP'S CONNECTION TO THE IISS.
	TRMNAX2	TERMINATE COMM'S CONNECTION TO THE IISS.

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NTM/SERV Where-external-routine-used List

System Module -----	Module Name -----	Module Purpose -----
SNDMSG		
	GDSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.
	INICOM2	INITIALIZE AP'S CONNECTION TO THE IISS.
	INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
	INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
	ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
	NSEND2	SEND MESSAGE TO AN AP IN THE IISS.
	QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
	TRMNAT2	TERMINATE AN AP'S CONNECTION TO THE IISS.
	TRMNAX2	TERMINATE COMM'S CONNECTION TO THE IISS.
SYS\$ASCTIM		
	ASCTIM	CALLED BY MPU'S TO GET THE SYSTEM TIME AS AN ASCII STRING.
SYS\$CREPRC		
	RCLE	REMOTE COMPILE AND LINK EXPERT DRIVER
SYS\$GETJPI		
	RCLE	REMOTE COMPILE AND LINK EXPERT DRIVER
SYS\$GETTIM		

NTM/SERV Where-external-routine-used List

System Module -----	Module Name -----	Module Purpose -----
	ASCTIM	CALLED BY MPU'S TO GET THE SYSTEM TIME AS AN ASCII STRING.
	GETTIM	GET THE SYSTEM TIME AS A BINARY STRING.
WAIT01	GDSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.
	INICOM2	INITIALIZE AP'S CONNECTION TO THE IISS.
	INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
	INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
	ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
	NSEND2	SEND MESSAGE TO AN AP IN THE IISS.
	QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
	RCLE	REMOTE COMPILE AND LINK EXPERT DRIVER
	RCV2	RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .
	TRMNAT2	TERMINATE AN AP'S CONNECTION TO THE IISS.
	TRMNAX2	TERMINATE COMM'S CONNECTION TO THE IISS.
WAIT02	GDSEND2	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.
	INICOM2	INITIALIZE AP'S CONNECTION TO THE IISS.
	INITAL2	INITIALIZE AP'S CONNECTION TO THE TIV MPU.
	INITEX2	INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.
	INITIL2	INITIALIZE AN AP'S CONNECTION TO AN AP SELECTED MPU.
	ISEND2	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
	NSEND2	SEND MESSAGE TO AN AP IN THE IISS.

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NTM/SERV Where-external-routine-used List

System Module -----	Module Name -----	Module Purpose -----
	QSEND2	SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
	RCV2	RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .

3.10.7 Main Program Parts List

The following lists each Main Program listed in 3.10.1 and all the modules which are called either by that module itself or by any of the documented modules which it calls. It is possible for a non-main module to be listed more than once if it is called by multiple modules. The called modules, in this case known as program parts, are marked as to whether they are documented here. If so, the phrase "well-defined module" appears by the module name, if not it is an "external routine". The Purpose of the Main Program module is listed as well.

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
ASCTIM		Purpose--> CALLED BY MPU'S TO GET THE SYSTEM TIME AS AN ASCII STRING.
	SYS\$ASCTIM	External routine
	SYS\$GETTIM	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
CHGROL2		Purpose-->CHANGE THE ROLE UNDER WHICH A USER LOGGED ON.
	CNLTIM	External routine
	ERRPRO	External routine
	GETMSG	External routine
	NSEND2	Well-defined module
	RCVMSG	External routine
	RELEVB	External routine
	SETTIM	External routine
	SNDMSG	External routine
	WAIT01	External routine
	WAIT02	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
CHKMSG2		Purpose--> TO CHECK FOR MESSAGES FROM OTHER APS IN THE IISS.
	ERRPRO	External routine
	GETMSG	External routine
	RCVMSG	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
FILGEN		Purpose--> INTERFACE TO THE FILE NAME QUEUE SERVER.
	ERRPRO	External routine
	NSEND	External routine
	RCV	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
GDACK2		Purpose--> SENDS GD ACK MESSAGE TO LOCAL MPU.
	CNLTIM	External routine
	ERRPRO	External routine
	GETMSG	External routine
	NSEND2	Well-defined module
	RCVMSG	External routine
	RELEVB	External routine
	SETTIM	External routine
	SNDMSG	External routine
	WAITO1	External routine
	WAITO2	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
GDSSEND2	Purpose-->	SEND MESSAGES THAT REQUIRE GUARANTEED DELIVERY PROCESSING.
	CNLTIM	External routine
	ERRPRO	External routine
	GETMSG	External routine
	RCVMSG	External routine
	RELEVB	External routine
	SETTIM	External routine
	SNDMSG	External routine
	WAIT01	External routine
	WAIT02	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
GETTIM		Purpose--> GET THE SYSTEM TIME AS A BINARY STRING.
	SYS\$GETTIM	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
GETUSR2		Purpose---, RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL, AND USER NAME.
	CNLTIM	External routine
	ERRPRO	External routine
	GETMSG	External routine
	NSEND2	Well-defined module
	RCV2	Well-defined module
	RCVMSG	External routine
	RELEVB	External routine
	SETTIM	External routine
	SNDMSG	External routine
	WAIT01	External routine
	WAIT02	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
INICOM2		Purpose--> INITIALIZE AP'S CONNECTION TO THE IISS.
	CRTMBX	External routine
	ERRPRO	External routine
	GETMSG	External routine
	GETNAM	External routine
	RCVMSG	External routine
	SETTIM	External routine
	SNDMSG	External routine
	WAIT01	External routine
	WAIT02	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
INITAL2	Purpose-- , INITIALIZE AP'S CONNECTION TO THE TIV MPU.	
	CRTMBX	External routine
	DELMBX	External routine
	ERRPRO	External routine
	GETMSG	External routine
	GETNAM	External routine
	LOCKEF	External routine
	RCVMSG	External routine
	RELEVB	External routine
	SETTIM	External routine
	SNDMSG	External routine
	WAIT01	External routine
	WAIT02	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
INITEX2	Purpose--> INITIALIZE UI LIKE AP'S CONNECTION TO THE UIV MPU.	
	CRTMBX	External routine
	DELMBX	External routine
	ERRPRO	External routine
	GETMSG	External routine
	GETNAM	External routine
	RCVMSG	External routine
	SETTIM	External routine
	SNDMSG	External routine
	WAIT01	External routine
	WAIT02	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
INITIL2	Purpose-->	INITIALIZE AN AP's CONNECTION TO AN AP SELECTED MPU.
	CRTMBX	External routine
	DELMBX	External routine
	ERRPRO	External routine
	GETMSG	External routine
	GETNAM	External routine
	RCVMSG	External routine
	RELEVB	External routine
	SETTIM	External routine
	SNDMSG	External routine
	WAIT01	External routine
	WAIT02	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
ISEND2	Purpose---	SEND MESSAGE THAT WILL CAUSE THE SPECIFIC INITIATION OF AN AP.
	CNLTIM	External routine
	ERRPRO	External routine
	GETMSG	External routine
	RCVMSG	External routine
	RELEVB	External routine
	SETTIM	External routine
	SNDMSG	External routine
	WAITO1	External routine
	WAITO2	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
LOGOFF2		Purpose--> SENDS LOGOFF MESSAGE TO THE MONITOR AP.
	CNLTIM	External routine
	ERRPRO	External routine
	GETMSG	External routine
	NSEND2	Well-defined module
	RCVMSG	External routine
	RELEVB	External routine
	SETTIM	External routine
	SNDMSG	External routine
	WAIT01	External routine
	WAIT02	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
LOGON2		Purpose--> SENDS LOGON MESSAGE TO THE MONITOR AP.
	CNLTIM	External routine
	ERRPRO	External routine
	GETMSG	External routine
	NSEND2	Well-defined module
	RCV2	Well-defined module
	RCVMSG	External routine
	RELEVB	External routine
	SETTIM	External routine
	SNDMSG	External routine
	WAIT01	External routine
	WAIT02	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
MBXLOG	GETNAM	Purpose--> PURPOSE NOT KNOWN - ACTIVE CODE. External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
QSEND2		Purpose--> SEND MESSAGES TO OTHER APS IN THE IISS FROM QSERVER AP'S.
	CNLTIM	External routine
	ERRPRO	External routine
	GETMSG	External routine
	RCVMSG	External routine
	RELEVB	External routine
	SETTIM	External routine
	SNDMSG	External routine
	WAIT01	External routine
	WAIT02	External routine

NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
RCLE		Purpose--> REMOTE COMPILE AND LINK EXPERT DRIVER
	APACCT	External routine
	DELMBX	External routine
	ENDRUN	External routine
	ERRPRO	External routine
	INITAL	External routine
	NSEND	External routine
	POSTCOM	Well-defined module
	PRECOM	Well-defined module
	RCLFILE	Well-defined module
	RCV	External routine
	RELEV	External routine
	SETTIM	External routine
	SNDMSG	External routine
	SYSCREPRC	External routine
	SYSGETJPI	External routine
	TRMNAT	Well-defined module
	TRMNAT2	Well-defined module
	WAIT01	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
SIGABT2		Purpose---, SIGNAL THE MPU TO ABORT A CHILD AP
	CNLTIM	External routine
	ERRPRO	External routine
	GETMSG	External routine
	NSEND2	Well-defined module
	RCVMSG	External routine
	RELEVB	External routine
	SETTIM	External routine
	SNDMSG	External routine
	WAIT01	External routine
	WAIT02	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
SIGERR		Purpose-->CALL SIGERR2
	APACCT	External routine
	CNLTIM	External routine
	ERRPRO	External routine
	GETMSG	External routine
	NSEND2	Well-defined module
	RCVMSG	External routine
	RELEVB	External routine
	SETTIM	External routine
	SIGERR2	Well-defined module
	SNDMSG	External routine
	WAIT01	External routine
	WAIT02	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
SNDRCLE		Purpose--> REMOTE COMPILE AND LINK EXPERT CALLING SERVICE
	ISEND	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
TRMNAX		Purpose-->CALL TRMNAX2
	APACCT	External routine
	ENDRUN	External routine
	ERRPRO	External routine
	GETNAM	External routine
	RELEVB	External routine
	SETTIM	External routine
	SNDMSG	External routine
	TRMNAX2	Well-defined module
	WAIT01	External routine

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NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
TSTMOD		Purpose-- , CALL COSOL ROUTINE TSTMOD2
	APAOCT	External routine
	TSTMOD2	Well-defined module

NTM/SERV Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
VNTHST		Purpose---CALL VNTHST2
	APACCT	External routine
	CULTIN	External routine
	ERRPRO	External routine
	GETMSG	External routine
	NSEND2	Well-defined module
	RCV2	Well-defined module
	RCVMSG	External routine
	RELEV8	External routine
	SETTIM	External routine
	SNDMSG	External routine
	WAIT01	External routine
	WAIT02	External routine
	VNTHST2	Well-defined module

3.10.8 Module Documentation

The following documentation describes information which is specific to each individual module being documented in this specification as listed in section 3.10.2. It provides a compact way of getting information that would be otherwise buried within each module's source code.

The specific items in this module documentation have the following meanings:

NAME:	Name of program Module.
PURPOSE:	Purpose of Module as detailed in the source code.
LANGUAGE:	Programming language source code is written in. The choices are: VAX-11 FORTRAN C (I/S-1 Workbench 'C') VAX-11 COBOL
MODULE TYPE:	Whether a Program, Subroutine, or Function.
SOURCE FILE:	Name of Source File from file specification.
SOURCE FILE TYPE:	Source File Extension from file specification.
HOST:	Whether this is a host-dependent routine (VAX or IBM) or blank if host-independent.
SUBSYSTEM:	IISS sub-system this file resides in.
SUBDIRECTORY:	Sub-directory of that subsystem in which this file resides.
DOCUMENTATION GROUP:	Name of documentation group of which this source file is a member.
DESCRIPTION:	A description of the module as obtained

from the source code.

ARGUMENTS: The arguments with which this routine is called if it is a Subroutine or a Function.

INCLUDE FILES: A list of all the files that are included into this module as well as their purposes.

ROUTINES CALLED: Subroutines or Functions, either documented or external, called by this module, if any.

CALLED DIRECTLY BY: The documented routines which call this module, if any.

USED IN MAIN PROGRAM(S): The documented Main Programs which contain this module in their parts list according to the list in section 3.10.7.

The Module Documentation is arranged alphabetically according to Module Name.

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NTM/SERV Module Documentation

NAME: ASCTIM
PURPOSE: CALLED BY NPU'S TO GET THE SYSTEM TIME AS
AN ASCII STRING.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: ASCTIM
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

- CALLS VMS SERVICES: SYS\$GETTIM

SYS\$ASCTIM

ARGUMENTS:

TIME-STRING = DSPLY [X(23)]
NTM-RETURN = DSPLY [X(5)]
SS-STATUS = DSPLY [S9(9)]

ROUTINES CALLED:

SYS\$GETTIM
SYS\$ASCTIM

NTM/SERV Module Documentation

NAME: CHGROL2
PURPOSE: CHANGE THE ROLE UNDER WHICH A USER LOGGED ON.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: CHGROL2
SOURCE FILE TYPE: .OOB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

ARGUMENTS:

TERMINAL-ID = DSPLY [X(3)]
USER-NAME = DSPLY [X(8)]
ROLE-NAME = DSPLY [X(10)]
RTN-CODE = DSPLY [X(5)]
API-GLOBAL-NAME-SEC = RECRD
API-GLOBAL-BUFFER-SEC = RECRD
NOT-MBX-EVENT-BLK = DSPLY [X(2032)]
OOLD-MBX-EVENT-BLK = DSPLY [X(2032)]
SEND-EVENT-BLK = DSPLY [X(2032)]
ACK-MBX-EVENT-BLK = DSPLY [X(2032)]
TIMER-EVENT-BLK = DSPLY [X(80)]

INCLUDE FILES:

SRVRET - NTM SERVICES STATUS CODES.
RETSTR - THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
SRVCD2 - SERVICE CODES FOR THE NTM SERVICE ROUTINES.
APIINNE - API GLOBAL NAME DATA.
BUFAPI - API GLOBAL BUFFER DATA.
APIEVN - NTM EVENT BLOCKS.

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ERRPRO - PROCESS ERROR INCLUDE FILE.

ROUTINES CALLED:

NSENDG - SEND MESSAGE TO AN AP IN THE IIS.
ERRPRO

NTM/SERV Module Documentation

NAME: CHKMSG2
PURPOSE: TO CHECK FOR MESSAGES FROM OTHER APS IN
THE IISS .
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: CHKMSG2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

-

ARGUMENTS:

LOGICAL-CHANNEL = DSPLY [X(3)]
MSG-SOURCE = DSPLY [X(10)]
ACCEPT-STATUS = DSPLY [X(5)]
API-GLOBAL-NAME-SEC = RECRD
API-GLOBAL-BUFFER-SEC = RECRD
NOT-MBX-EVENT-BLK = DSPLY [X(2032)]
COLD-MBX-EVENT-BLK = DSPLY [X(2032)]
SEND-EVENT-BLK = DSPLY [X(2032)]
ACK-MBX-EVENT-BLK = DSPLY [X(2032)]
TIMER-EVENT-BLK = DSPLY [X(80)]
TEST-MODE-FLAG = DSPLY [X]

INCLUDE FILES:

MSGSTR - MESSAGE FORMAT INCLUDE FILE.
APILCL - THE APIS COMMON LOCAL DATA.
SRVCDG - SERVICE CODES FOR THE NTM SERVICE ROUTINES.
RETSTR - THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
APIINHE - API GLOBAL NAME DATA.
BUFAPI - API GLOBAL BUFFER DATA.

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APIEBV - NTH EVENT BLOCKS.
TSTMDE - TEST MODE FLAG.
ERRPRO - PROCESS ERROR INCLUDE FILE

ROUTINES CALLED:

RCVMSG
GETMSG
ERRPRO

NTM/SERV Module Documentation

NAME: ERRAPI
PURPOSE: WRITES ERROR RECORD TO ERRLOG FILE
ERRAPI.DAT
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: ERRAPI
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

ARGUMENTS:

CALL-NAME = DSPLY [X(6)]
ROUTINE-NAME = DSPLY [X(8)]
RET-CODE = DSPLY [X(5)]
SS-STATUS = DSPLY [S9(9)]

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NTM/SERV Module Documentation

NAME: FILGEN
PURPOSE: INTERFACE TO THE FILE NAME QUEUE SERVER
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: FILGEN
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

-
THE PURPOSE OF THIS ROUTINE IS TO ACT AS A
GENERALIZED INTERFACE TO THE FILE NAME
QUEUE SERVER.
mod for release 2.0 to return a ret-status
WILL ASK FOR AND RECEIVE A BLOCK OF 20 NAMES
AND HAND THEM OUT TO A CALLER 1 AT A TIME.
IF INUT-HOST NAME IS BLANK, THEN USE THE
CURRENT HOST AND PASS IT BACK TO THE CALLER.
COPY OF GENFIL RENAMED AS FILGEN FOR USE IN NTM.

ARGUMENTS:

FILE-HOST - DSPLY [XXX]

INCLUDE FILES:

SRVRET - NTM SERVICES STATUS CODES
ERRPRO - PROCESS ERROR INCLUDE FILE

ROUTINES CALLED:

NSEND
RCV
ERRPRO

NTM/SERV Module Documentation

NAME: GDACK2
PURPOSE: SENDS GD ACK MESSAGE TO LOCAL MPU.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: GDACK2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTH
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTHSERV

DESCRIPTION:

SENDS GD ACK MESSAGE TO LOCAL MPU. THIS INFORMS
THE MPU THAT THE AP HAS ACCEPTED THE GD MESSAGE.

ARGUMENTS:

MESSAGE-SERIAL-NUMBER = DSPLY [X(7)]
RETCODE = DSPLY [X(5)]
API-GLOBAL-NAME-SEC = RECRD
API-GLOBAL-BUFFER-SEC = RECRD
NOT-MBX-EVENT-BLK = DSPLY [X(2032)]
COLD-MBX-EVENT-BLK = DSPLY [X(2032)]
SEND-EVENT-BLK = DSPLY [X(2032)]
ACK-MBX-EVENT-BLK = DSPLY [X(2032)]
TIMER-EVENT-BLK = DSPLY [X(80)]

INCLUDE FILES

SRVRET - NTH SERVICES STATUS CODES
SRVCD2 - SERVICE CODES FOR THE NTH SERVICE ROUTINES
RETSTR - THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS
APILCL - THE APIS COMMON LOCAL DATA
APIINME - API GLOBAL NAME DATA
BUFAPI - API GLOBAL BUFFER DATA
APIEVB - NTH EVENT BLOCKS
ERRPRO - PROCESS ERROR INCLUDE FILE

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ROUTINES CALLED:

NSEND2 - SEND MESSAGE TO AN AP IN THE IISS.
ERRPRO

NTM/SERV Module Documentation

NAME: GDSSEND2
PURPOSE: SEND MESSAGES THAT REQUIRE GUARANTEED
DELIVERY PROCESSING.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: GDSSEND2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

ARGUMENTS:

DSTINATION = DSPLY [X(10)]
LOGICAL-CHANNEL = DSPLY [X(3)]
TIMEOUT-VALUE = DSPLY [X(15)]
DATA-TYPE = DSPLY [X]
MESSAGE-TYPE = DSPLY [X(2)]
SEND-SIZE = DSPLY [9(5)]
USER-DATA = RECRD
ACCEPT-STATUS = DSPLY [X(5)]
MESSAGE-SERIAL-NUMBER = DSPLY [X(7)]
API-GLOBAL-NAME-SEC = RECRD
API-GLOBAL-BUFFER-SEC = RECRD
NOT-NBX-EVENT-BLK = DSPLY [X(2032)]
OLD-NBX-EVENT-BLK = DSPLY [X(2032)]
SEND EVENT-BLK = DSPLY [X(2032)]
ACK NBX EVENT BLK = DSPLY [X(2032)]
TIMER EVENT BLK = DSPLY [X(80)]

INCLUDE FILES

NAME	PURPOSE
------	---------

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APILCL	- THE APIS COMMON LOCAL DATA.
SRVCD	- SERVICE CODES FOR THE NTM SERVICE ROUTINES.
RETSTR	- THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
APINME	- API GLOBAL NAME DATA.
BUFAP	- API GLOBAL BUFFER DATA.
APIEB	- NTM EVENT BLOCKS.
ERRPRO	- PROCESS ERROR INCLUDE FILE

ROUTINES CALLED:

SNDMSG
SETTIM
WAIT01
RCVMSG
WAIT02
GETMSG
CNLTIM
RELEVB
ERRPRO

NTM/SERV Module Documentation

NAME: GETTIM
PURPOSE: GET THE SYSTEM TIME AS A BINARY STRING.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: GETTIM
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

- CALLS VMS SERVICES: SYS\$GETTIM
THE GET TIME SYSTEM SERVICE FURNISHES THE CURRENT SYSTEM
TIME IN 64-BIT FORMAT. THE SYSTEM TIME IS UPDATED EVERY
10 MILLISECONDS, AND THE TIME IS RETURNED IN
100-NANOSECOND UNITS FROM THE SYSTEM BASE TIME.

ARGUMENTS:

TIME-VALUE = DSPLY [9(18)]
NTM-RETURN = DSPLY [X(5)]
SS-STATUS = DSPLY [S9(9)]

ROUTINES CALLED:

SYS\$GETTIM

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NTM/SERV Module Documentation

NAME: GETUSR2
PURPOSE: RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL,
AND USER NAME.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: GETUSR2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL, AND
USER NAME TO THE CALLING AP. NOTE: USER NAME
IS RETURNED ONLY IF THE ORIGINAL SOURCE AP
IS THE USER INTERFACE.
-

ARGUMENTS:

R-AP-NAME = DSPLY [X(10)]
LOGICAL-CHANNEL = DSPLY [X(3)]
USER-NAME = DSPLY [X(8)]
ROLE-NAME = DSPLY [X(10)]
TERM-ID = DSPLY [X(2)]
GETUSR-RET = DSPLY [X(5)]
API-GLOBAL-NAME-SEC = RECRD
API-GLOBAL-BUFFER-SEC = RECRD
HOT-MBX-EVENT-BLK = DSPLY [X(2032)]
COLD-MBX-EVENT-BLK = DSPLY [X(2032)]
SEND-EVENT-BLK = DSPLY [X(2032)]
ACK-MBX-EVENT-BLK = DSPLY [X(2032)]
TIMER-EVENT-BLK = DSPLY [X(80)]
TEST-MODE-FLAG = DSPLY [X]

INCLUDE FILES:

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SRVRET	-	NTM SERVICES STATUS CODES..
SRVCD2	-	SERVICE CODES FOR THE NTM SERVICE ROUTINES.
RETSTR	-	THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
APINME	-	API GLOBAL NAME DATA.
BUFAPI	-	API GLOBAL BUFFER DATA.
APIEBV	-	NTM EVENT BLOCKS.
TSTMDE	-	TEST MODE FLAG.
ERRPRO	-	PROCESS ERROR INCLUDE FILE

ROUTINES CALLED:

NSEND2	-	SEND MESSAGE TO AN AP IN THE IISS.
RCV2	-	RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .
ERRPRO		

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NTM/SERV Module Documentation

NAME: INICOM2
PURPOSE: INITIALIZE AP'S CONNECTION TO THE IISS.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: INICOM2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

ARGUMENTS:

COMM-RCV-EVENT-BLOCK = DSPLY [X(2032)]
INPUT-MBX-NAME = DSPLY [X(14)]
APC-HOT-MBX-NAME = DSPLY [X(14)]
APC-COLD-MBX-NAME = DSPLY [X(14)]
RET-STATUS = DSPLY [X(5)]
MPU-INSTANCE = DSPLY [XX]

INCLUDE FILES:

ALMSGH - INITIALIZE LOCAL NTM-MESSAGE VARIABLES.
INICMD - INITIALIZATION MESSAGE FORMAT.
ERRPRO - PROCESS ERROR INCLUDE FILE.

ROUTINES CALLED:

GETNAM
CRTMBX
SNDMSG
SETTIM
WAIT01

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RCVMSG
VAIT02
GETMSG
ERRPRO

NTM/SERV Module Documentation

NAME: INITIAL2
PURPOSE: INITIALIZE AP'S CONNECTION TO THE TIV MPU.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: INITIAL2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

ARGUMENTS:

BUFFER = DSPLY [X(4096)]
BUFFER-SIZE = DSPLY [9(5)]
SYS-STATE = DSPLY [X]
USER-RET-CODE = DSPLY [X(5)]
API-GLOBAL-NAME-SEC = RECRD
API-GLOBAL-BUFFER-SEC = RECRD
HOT-MBX-EVENT-BLK = DSPLY [X(2032)]
COLD-MBX-EVENT-BLK = DSPLY [X(2032)]
SEND-EVENT-BLK = DSPLY [X(2032)]
ACK-MBX-EVENT-BLK = DSPLY [X(2032)]
TIMER-EVENT-BLK = DSPLY [X(80)]
TEST-MODE-FLAG = DSPLY [X]

INCLUDE FILES:

APIINI - FOR INITIATION PURPOSES
ALMSGH - INITIALIZE LOCAL NTM-MESSAGE VARIABLES.
APILCL - THE APIS COMMON LOCAL DATA.
APCNM2 - APC GLOBAL NAME DATA.
SRVCDS - SERVICE CODES FOR THE NTM SERVICE ROUTINES.
RETSTR - THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.

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APINME	- API GLOBAL NAME DATA.
BUFAPI	- API GLOBAL BUFFER DATA.
APIEBV	- NTM EVENT BLOCKS.
TSTMDE	- TEST MODE FLAG.
ERRPRO	- PROCESS ERROR INCLUDE FILE

ROUTINES CALLED:

LOCKEF
GETNAM
CRTMBX
RCVMSG
SETTIM
WAITO2
GETMSG
SNDMSG
WAITO1
DELMBX
RELEVB
ERRPRO

NTM/SERV Module Documentation

NAME: INITEX2
PURPOSE: INITIALIZE UI LIKE AP'S CONNECTION TO THE
UIV MPU.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: INITEX2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

-

ARGUMENTS:

BUFFER = DSPLY [X(9999)]
BUFFER-SIZE = DSPLY [9(5)]
USER-RET-CODE = DSPLY [X(5)]
API-GLOBAL-NAME-SEC = RECRD
API-GLOBAL-BUFFER-SEC = RECRD
HOT-MBX-EVENT-BLK = DSPLY [X(2032)]
COLD-MBX-EVENT-BLK = DSPLY [X(2032)]
SEND-EVENT-BLK = DSPLY [X(2032)]
ACK-MBX-EVENT-BLK = DSPLY [X(2032)]
TIMER-EVENT-BLK = DSPLY [X(80)]
TEST-MODE-FLAG = DSPLY [X]

INCLUDE FILES:

APIINI - FOR INITIATION PURPOSES.
ALMSGH - INITIALIZE LOCAL NTM-MESSAGE VARIABLES.
APILCL - THE APIS COMMON LOCAL DATA.
SRVCDS - SERVICE CODES FOR THE NTM SERVICE ROUTINES.
RETSTR - THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
APCNM1 - APC GLOBAL NAME DATA.

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APINME	- API GLOBAL NAME DATA.
BUFAPI	- API GLOBAL BUFFER DATA.
APIEBV	- NTM EVENT BLOCK.
TSTMDE	- TEST MODE FLAG.
ERRPRO	- PROCESS ERROR INCLUDE FILE.

ROUTINES CALLED:

GETNAM
CRTMBX
SNDMSG
SETTIM
WAIT01
RCVMSG
WAIT02
GETMSG
DELMBX
ERRPRO

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NTM/SERV Module Documentation

NAME: INITIL2
PURPOSE: INITIALIZE AN AP'S CONNECTION TO AN AP
SELECTED MPU.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: INITIL2
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

ARGUMENTS:

BUFFER = DSPLY [X(4096)]
BUFFER-SIZE = DSPLY [9(5)]
MPU-NAME = DSPLY [X(3)]
SYS-STATE = DSPLY [X]
USER-RET-CODE = DSPLY [X(5)]
API-GLOBAL-NAME-SEC = RECRD
API-GLOBAL-BUFFER-SEC = RECRD
HOT-MBX-EVENT-BLK = DSPLY [X(2032)]
COLD-MBX-EVENT-BLK = DSPLY [X(2032)]
SEND-EVENT-BLK = DSPLY [X(2032)]
ACK-MRX-EVENT-BLK = DSPLY [X(2032)]
TIMER-EVENT-BLK = DSPLY [X(80)]
TEST-MODE-FLAG = DSPLY [X]

INCLUDE FILES:

APIINI - FOR INITIATION PURPOSES.
ALMSGH - INITIALIZE LOCAL NTM-MESSAGE VARIABLES.
APILCL - THE APIS COMMON LOCAL DATA.
APCNM2 - APC GLOBAL NAME DATA.

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SRVCDS	- SERVICE CODES FOR THE NTH SERVICE ROUTINES
RETSTR	- THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS
APIHME	- API GLOBAL NAME DATA
BUFAPI	- API GLOBAL BUFFER DATA
APIEVB	- NTH EVENT BLOCKS
TSTMDE	- TEST MODE FLAG
ERRPRO	- PROCESS ERROR INCLUDE FILE

ROUTINES CALLED:

GETNAM
CRTMBX
RCVMSG
SETTIM
WAITO2
GETMSG
SNDMSG
WAITO1
DELMBX
RELEVB
ERRPRO

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NTM/SERV Module Documentation

NAME: INSTMC2
PURPOSE: GET THE SYSGEN INSTANCE NUMBER.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: INSTMC2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

ARGUMENTS:

INSTANCE-NUMBER = DSPLY [XX]
RET-STATUS = DSPLY [X(5)]
MPU-INSTANCE = DSPLY [XX]

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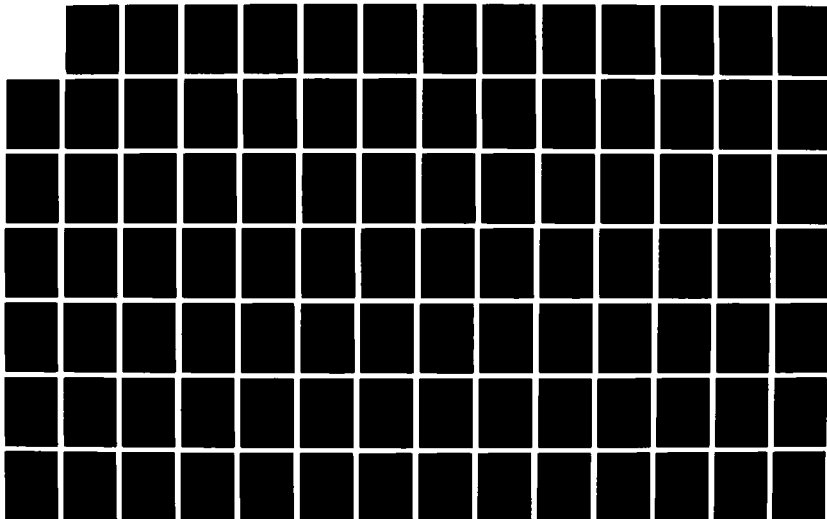
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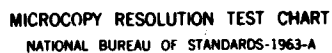
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

NTM/SERV Module Documentation

NAME: ISEND2
PURPOSE: SEND MESSAGE THAT WILL CAUSE THE SPECIFIC
INITIATION OF AN
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: ISEND2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

ARGUMENTS:

DSTINATION = DSPLY [X(10)]
LOGICAL-CHANNEL = DSPLY [X(3)]
TIMEOUT-VALUE = DSPLY [X(15)]
DATA-TYPE = DSPLY [X]

INCLUDE FILES:

MSGSTR - PURPOSE
APILCL - THE APIS COMMON LOCAL DATA.
SRVCDS - SERVICE CODES FOR THE NTM SERVICE ROUTINES.
RETSTR - THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
APINME - API GLOBAL NAME DATA.
BUFAPL - API GLOBAL BUFFER DATA.
APIEBV - NTM EVENT BLOCKS.
ERRPRO - PROCESS ERROR INCLUDE FILE.

ROUTINES CALLED:

SNDMSG

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SETTIM
WAIT01
RCVMSG
WAIT02
GETMSG
CNLTIM
RELEVB
ERRPRO

NTM/SERV Module Documentation

NAME: LOGOFF2
PURPOSE: SENDS LOGOFF MESSAGE TO THE MONITOR AP.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: LOGOFF2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

ACCEPTS LOGOFF DATA FROM THE UI AND FORWARDS
A MESSAGE TO THE MONITOR AP FOR UPDATING THE
IISS LOGON TABLE.
-

ARGUMENTS:

TERMINAL-ID = DSPLY [X(2)]
USER-NAME = DSPLY [X(8)]
ROLE-NAME = DSPLY [X(10)]
LOG-RET-CODE = DSPLY [X(5)]
API-GLOBAL-NAME-SEC = RECRD
API-GLOBAL-BUFFER-SEC = RECRD
HOT-MBX-EVENT-BLK = DSPLY [X(2032)]
COLD-MBX-EVENT-BLK = DSPLY [X(2032)]
SEND-EVENT-BLK = DSPLY [X(2032)]
ACK-MBX-EVENT-BLK = DSPLY [X(2032)]
TIMER-EVENT-BLK = DSPLY [X(80)]

INCLUDE FILES:

SRVRET - NTM SERVICES STATUS CODES..
SRVCD2 - SERVICE CODES FOR THE NTM SERVICE ROUTINES.
RETSTR - THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
APINME - API GLOBAL NAME DATA.
BUFAPI - API GLOBAL BUFFER DATA.

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APIEBV - NTM EVENT BLOCKS.
ERRPRO - PROCESS ERROR INCLUDE FILE.

ROUTINES CALLED:

NSEND2 - SEND MESSAGE TO AN AP IN THE IISS.
ERRPRO

NTM/SERV Module Documentation

NAME: LOGON2
PURPOSE: SENDS LOGON MESSAGE TO THE MONITOR AP.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: LOGON2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

ACCEPTS LOGON DATA FROM THE UI AND FORWARDS
A MESSAGE TO THE MONITOR AP FOR UPDATING THE
IISS LOGON TABLE. WAITS ON THE RESPONSE FROM
MONITOR BEFORE RETURNING CONTROL TO THE UI.

ARGUMENTS:

TERMINAL-ID = DSPLY [X(2)]
USER-NAME = DSPLY [X(8)]
ROLE-NAME = DSPLY [X(10)]
SESSION-START-TIME = DSPLY [X(23)]
CHAN-RANGE-START = DSPLY [X(3)]
CHAN-RANGE-END = DSPLY [X(3)]
LOG-RET-CODE = DSPLY [X(5)]
API-GLOBAL-NAME-SEC = RECRD
API-GLOBAL-BUFFER-SEC = RECRD
HOT-MBX-EVENT-BLK = DSPLY [X(2032)]
COLD-MBX-EVENT-BLK = DSPLY [X(2032)]
SEND-EVENT-BLK = DSPLY [X(2032)]
ACK-MBX-EVENT-BLK = DSPLY [X(2032)]
TIMER-EVENT-BLK = DSPLY [X(80)]
TEST-MODE-FLAG = DSPLY [X]

INCLUDE FILES:

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SRVRET	- NYM SERVICES STATUS CODES.
RETSTR	- THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
SRVCD2	- SERVICE CODES FOR THE NTH SERVICE ROUTINES.
APINME	- API GLOBAL NAME DATA.
BUFAP1	- API GLOBAL BUFFER DATA.
APIEBV	- NTH EVENT BLOCKS.
TSTMDE	- TEST MODE FLAG.
ERRPRO	- PROCESS ERROR INCLUDE FILE.

ROUTINES CALLED:

NSEND2	- SEND MESSAGE TO AN AP IN THE IISS.
RCV2	- RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .
ERRPRO	

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NTM/SERV Module Documentation

NAME: MBXLG2
PURPOSE: PURPOSE NOT KNOWN - ACTIVE CODE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: MBXLG2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

-

ARGUMENTS:

CALL-NAME = DSPLY [X(72)]

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NTM/SERV Module Documentation

NAME: MBXLOG
PURPOSE: PURPOSE NOT KNOWN - ACTIVE CODE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: MBXLOG
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

-

ARGUMENTS:

MSG-BUFFER = DSPLY [X(72)]

ROUTINES CALLED:

GETNAM

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NTM/SERV Module Documentation

NAME: NSEND2
PURPOSE: SEND MESSAGE TO AN AP IN THE IISS.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: NSEND2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

-

ARGUMENTS:

DSTINATION = DSPLY [X(10)]
LOGICAL-CHANNEL = DSPLY [X(3)]
TIMEOUT-VALUE = DSPLY [X(15)]
DATA-TYPE = DSPLY [X]

INCLUDE FILES:

MSGSTR - PURPOSE
APILCL - THE APIS COMMON LOCAL DATA.
SRVCDS - SERVICE CODES FOR THE NTM SERVICE ROUTINES.
RETSTR - THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
APINME - API GLOBAL NAME DATA.
BUFAPI - API GLOBAL BUFFER DATA.
APIEBV - NTM EVENT BLOCKS.
ERRPRO - PROCESS ERROR INCLUDE FILE.

ROUTINES CALLED:

SNDMSG
SETTIM

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WAIT01
RCVMSG
WAIT02
GETMSG
CNLTIM
RELEVB
ERRPRO

CALLED DIRECTLY BY:

CHGROL2 - CHANGE THE ROLE UNDER WHICH A USER LOGGED ON.
GDACK2 - SENDS GD ACK MESSAGE TO LOCAL MPU.
GETUSR2 - RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL, AND
USER NAME.
LOGOFF2 - SENDS LOGOFF MESSAGE TO THE MONITOR AP.
LOGON2 - SENDS LOGON MESSAGE TO THE MONITOR AP.
SIGABT2 - SIGNAL THE MPU TO ABORT A CHILD AP
SIGERR2 - SENDS AN ERROR MESSAGE TO MONITOR AND TO
ORIGINAL SOURCE.
WTHST2 - RETURNS THE NAME OF THE HOST ON WHICH AN AP
RESIDES.

USED IN MAIN PROGRAM(S):

CHGROL2 - CHANGE THE ROLE UNDER WHICH A USER LOGGED ON.
GDACK2 - SENDS GD ACK MESSAGE TO LOCAL MPU.
GETUSR2 - RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL, AND
USER NAME.
LOGOFF2 - SENDS LOGOFF MESSAGE TO THE MONITOR AP.
LOGON2 - SENDS LOGON MESSAGE TO THE MONITOR AP.
SIGABT2 - SIGNAL THE MPU TO ABORT A CHILD AP
SIGERR - CALL SIGERR2
WTHST - CALL WTHST2

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NTM/SERV Module Documentation

NAME: POSTCOM
PURPOSE: WRITE "CLEAN-UP" CONTROL CARDS TO THE
COMMAND FILE
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: POSTCOM
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

ARGUMENTS:

FILENAM = DSPLY [X(30)]

ROUTINES CALLED:

RCLFILE - DO COMMAND FILE OPERATIONS FOR RCLE

CALLED DIRECTLY BY:

RCLE - REMOTE COMPILE AND LINK EXPERT DRIVER

USED IN MAIN PROGRAM(S):

RCLE - REMOTE COMPILE AND LINK EXPERT DRIVER

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NTM/SERV Module Documentation

NAME: PRECOM
PURPOSE: WRITE "SET-UP" CONTROL CARDS TO THE
COMMAND FILE
LANGUAGE: VAX-11 COBOL
MODULE TYPE: PROGRAM
SOURCE FILE: PRECOM
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

ROUTINES CALLED:

RCLFILE - DO COMMAND FILE OPERATIONS FOR RCLE

CALLED DIRECTLY BY:

RCLE - REMOTE COMPILE AND LINK EXPERT DRIVER

USED IN MAIN PROGRAM(S):

RCLE - REMOTE COMPILE AND LINK EXPERT DRIVER

NTM/SERV Module Documentation

NAME: QSEND2
PURPOSE: SEND MESSAGES TO OTHER APS IN THE IISS
FROM QSERVER AP'S.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: QSEND2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

THIS ROUTINE IS A PRELIMINARY VERSION OF THE SEND*
SERVICE FOR THE QSERVER. CURRENTLY, IT ONLY *
SUPPORTS QSERVERS THAT SERVICE ONE REQUEST AT A *
TIME. *

ARGUMENTS:

DSTINATION = DSPLY [X(10)]
LOGICAL-CHANNEL = DSPLY [X(3)]
TIMEOUT-VALUE = DSPLY [X(15)]
DATA-TYPE = DSPLY [X]
MESSAGE-TYPE = DSPLY [X(2)]
SEND-SIZE = DSPLY [9(5)]
USER-DATA = RECRD
ACCEPT-STATUS = DSPLY [X(5)]
API-GLOBAL-NAME-SEC = RECRD
API-GLOBAL-BUFFER-SEC = RECRD
HOT-MBX-EVENT-BLK = DSPLY [X(2032)]
COLD-MBX-EVENT-BLK = DSPLY [X(2032)]
SEND-EVENT-BLK = DSPLY [X(2032)]
ACK-MBX-EVENT-BLK = DSPLY [X(2032)]
TIMER-EVENT-BLK = DSPLY [X(80)]

INCLUDE FILES:

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MSGSTR - PURPOSE
APILCL - THE APIS COMMON LOCAL DATA.
SRVCDS - SERVICE CODES FOR THE NTM SERVICE ROUTINES.
RETSTR - THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
APINME - API GLOBAL NAME DATA.
BUFAPI - API GLOBAL BUFFER DATA.
APIEBV - NTM EVENT BLOCKS.
ERRPRO - PROCESS ERROR INCLUDE FILE.

ROUTINES CALLED:

SNDMSG
SETTIM
WAIT01
RCVMSG
WAIT02
GETMSG
CNLTIM
RELEVB
ERRPRO

NTM/SERV Module Documentation

NAME: RCLE
PURPOSE: REMOTE COMPILE AND LINK EXPERT DRIVER
LANGUAGE: VAX-11 COBOL
MODULE TYPE: PROGRAM
SOURCE FILE: RCLE
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

RCLE IS INITIATED BY "SNDRCLE" NTM SERVICE. IT BUILDS A *
COMMAND FILE WHICH INCLUDES THE SYSTEM CONTROL CARDS FOUND
IN THE INITIATING MESSAGE. THIS COMMAND FILE IS THEN RUN AS
A DETACHED PROCESS. WHEN IT COMPLETES, RCLE WILL RETURN A
MESSAGE CONTAINING THE NAME OF THE LOG FILE.
MODIFIED: 7/19/85 TO NOT CALL GETUSER. IT NOW REPLIES TO
RCV.

INCLUDE FILES:

SRVRET - NTM SERVICES STATUS CODES..
APILCL - THE APIS COMMON LOCAL DATA.
APIEBV - NTM EVENT BLOCKS
RETSTR - THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
ERRPRO - PROCESS ERROR INCLUDE FILE

ROUTINES CALLED:

INITAL
RCV
RCLFILE - DO COMMAND FILE OPERATIONS FOR RCLE
PREGOM - WRITE "SET-UP" CONTROL CARDS TO THE COMMAND FILE
POSTCOM - WRITE "CLEAN-UP" CONTROL CARDS TO THE COMMAND
FILE
SYS\$GETJPI
SYS\$CREPRC

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SETTIM
WAIT01
NSEND
TRMNAT
ERRPRO

- CALL TRMNAT2

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NTM/SERV Module Documentation

NAME: RCLFILE
PURPOSE: DO COMMAND FILE OPERATIONS FOR RCLE
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: RCLFILE
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

ARGUMENTS:

C-CARD = DSPLY [X(72)]
REQUEST = DSPLY [X(5)]

CALLED DIRECTLY BY:

POSTCOM - WRITE "CLEAN-UP" CONTROL CARDS TO THE COMMAND
FILE
PRECOM - WRITE "SET-UP" CONTROL CARDS TO THE COMMAND FILE
RCLE - REMOTE COMPILE AND LINK EXPERT DRIVER

USED IN MAIN PROGRAM(S):

RCLE - REMOTE COMPILE AND LINK EXPERT DRIVER

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NTM/SERV Module Documentation

NAME: RCV2
PURPOSE: RECEIVE MESSAGES FROM OTHER AP'S IN THE
IISS .
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: RCV2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

-

ARGUMENTS:

LOGICAL-CHANNEL = DSPLY [X(3)]
WAIT-FLAG = DSPLY [X]
MSG-SOURCE = DSPLY [X(10)]
MESSAGE-TYPE = DSPLY [X(2)]
DATA-LENGTH = DSPLY [9(5)]
USER-DATA = RECRD
ACCEPT-STATUS = DSPLY [X(5)]
MSG-SERIAL-NUMBER = DSPLY [X(7)]
API-GLOBAL-NAME-SEC = RECRD
API-GLOBAL-BUFFER-SEC = RECRD
HOT-MBX-EVENT-BLK = DSPLY [X(2032)]
COLD-MBX-EVENT-BLK = DSPLY [X(2032)]
SEND-EVENT-BLK = DSPLY [X(2032)]
ACK-MBX-EVENT-BLK = DSPLY [X(2032)]
TIMER-EVENT-BLK = DSPLY [X(80)]
TEST-MODE-FLAG = DSPLY [X]

INCLUDE FILES:

MSGSTR - PURPOSE

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APILGL	- THE APIS COMMON LOCAL DATA.
SRVCDS	- SERVICE CODES FOR THE NTM SERVICE ROUTINES.
RETSTR	- THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
APINME	- API GLOBAL NAME DATA.
BUFAPI	- API GLOBAL BUFFER DATA.
APIEBV	- NTM EVENT BLOCKS.
TSTMDE	- TEST MODE FLAG.
ERRPRO	- PROCESS ERROR INCLUDE FILE

ROUTINES CALLED:

RCVMSG
WAIT02
WAIT01
GETMSG
ERRPRO

CALLED DIRECTLY BY:

```

GETUSR2      - RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL, AND
               USER NAME.
LOGON2       - SENDS LOGON MESSAGE TO THE MONITOR AP.
WHTHST2      - RETURNS THE NAME OF THE HOST ON WHICH AN AP
               RESIDES.

```

USED IN MAIN PROGRAM(S):

```

GETUSR2      - RETURNS ORIGINAL SOURCE, LOGICAL CHANNEL, AND
               USER NAME.
LOGON2       - SENDS LOGON MESSAGE TO THE MONITOR AP.
WTHHST       - CALL WTHHST2

```

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NTM/SERV Module Documentation

NAME: SIGABT2
PURPOSE: SIGNAL THE MPU TO ABORT A CHILD AP
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SIGABT2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

NTM SERVICE TO SIGNAL ABORT CHILD TO THE MPU. *
AFTER THIS PROCESS, THE MPU PROCESS "ABORT" TAKES OVER. *

-
TELL THE LOCAL MPU TO ABORT A CHILD. THE CHILD MAY BE ON
THE SAME OR DIFFERENT CLUSTER/HOST.

ARGUMENTS:

AP-NAME = DSPLY [X(10)]

INCLUDE FILES:

SRVRET - NTM SERVICES STATUS CODES..
RETSTR - THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
SRVCD2 - SERVICE CODES FOR THE NTM SERVICE ROUTINES.
APILCL - THE APIS COMMON LOCAL DATA.
APINME - API GLOBAL NAME DATA.
BUFAPI - API GLOBAL BUFFER DATA.
APIEBV - NTM EVENT BLOCKS.
TSTMDE - TEST MODE FLAG.
ERRPRO - PROCESS ERROR INCLUDE FILE

ROUTINES CALLED:

NSEND2 - SEND MESSAGE TO AN AP IN THE IISS.
ERRPRO

NTM/SERV Module Documentation

NAME: SIGERR
PURPOSE: CALL SIGERR2
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: INT ()
SOURCE FILE: SIGERR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

SYNOPSIS

CALL SIGERR USING ERROR-CODE,
SEVERITY-LEVEL,
ERROR-DESCRIPTION,
RETURN-CODE.

INPUTS/OUTPUTS:

INPUTS:

ERROR-CODE PIC X(5).
SEVERITY-LEVEL PIC X.
ERROR-DESCRIPTION PIC X(72).

OUTPUTS:

RETURN-CODE PIC X(5).

DESCRIPTION

SIGERR IMPLMENTS A TWO-STEP CALL TO SIGERR2,
ADDING THE ADDRESSES OF GLOBAL AREAS TO THE
PARAMETER LIST (IBM COBOL DOESN'T ALLOW EXTERNAL
DATA AREAS).

ARGUMENTS:

A = CHAR *
B = CHAR *
C = CHAR *

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D - CHAR *

INCLUDE FILES:

APINME - API GLOBAL NAME DATA.
BUFAPI - API GLOBAL BUFFER DATA.
APIEBV - NTM EVENT BLOCKS.

ROUTINES CALLED:

APACCT
SIGERR2 - SENDS AN ERROR MESSAGE TO MONITOR AND TO
ORIGINAL SOURCE.

NTM/SERV Module Documentation

NAME: SIGERR2
PURPOSE: SENDS AN ERROR MESSAGE TO MONITOR AND TO ORIGINAL SOURCE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SIGERR2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

ACCEPTS ERROR DATA FROM AN AP AND FORWARDS *
A MESSAGE TO THE MONITOR AP FOR ITS ERROR *
REPORTING AND ONE TO THE ORIGINAL SOURCE OF THE *
AP. *

ARGUMENTS:

ERROR-CODE = DSPLY [X(5)]
SEVERITY-LEVEL = DSPLY [X]
ERROR-DESCRIPTION = DSPLY [X(72)]
RTN-CODE = DSPLY [X(5)]
API-GLOBAL-NAME-SEC = RECRD
API-GLOBAL-BUFFER-SEC = RECRD
HOT-MBX-EVENT-BLK = DSPLY [X(2032)]
COLD-MBX-EVENT-BLK = DSPLY [X(2032)]
SEND-EVENT-BLK = DSPLY [X(2032)]
ACK-MBX-EVENT-BLK = DSPLY [X(2032)]
TIMER-EVENT-BLK = DSPLY [X(80)]

INCLUDE FILES:

SRVRET - NTM SERVICES STATUS CODES..
RETSTR - THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
SRVCD2 - SERVICE CODES FRO THE NTM SERVICE ROUTINES.

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APILCL - THE APIS COMMON LOCAL DATA.
APINME - API GLOBAL NAME DATA.
BUFAPI - API GLOBAL BUFFER DATA.
APIEBV - NTH EVENT BLOCKS.
ERRPRO - PROCESS ERROR INCLUDE FILE.

ROUTINES CALLED:

NSEND2 - SEND MESSAGE TO AN AP IN THE IISS.
ERRPRO

CALLED DIRECTLY BY:

SIGERR - CALL SIGERR2

USED IN MAIN PROGRAM(S):

SIGERR - CALL SIGERR2

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NTM/SERV Module Documentation

NAME: SNDRCLE
PURPOSE: REMOTE COMPILE AND LINK EXPERT CALLING
SERVICE
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SNDRCLE
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

ARGUMENTS:

NODE = DSPLY [X(3)]
CHANNEL = DSPLY [X(3)]
CTL-CARD = DSPLY [X(1096)]
RET-STATUS = DSPLY [X(5)]

INCLUDE FILES:

SRVRET - NTM SERVICES STATUS CODES.

ROUTINES CALLED:

ISEND

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NTM/SERV Module Documentation

NAME: TRMNAT
PURPOSE: CALL TRMNAT2
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: INT ()
SOURCE FILE: TRMNAT
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

SYNOPSIS

CALL TRMNAT USING USER-TERMINATE-STATUS.

INPUTS/OUTPUTS:

INPUTS:

USER-TERMINATE-STATUS PIC X.

OUTPUTS:

DESCRIPTION

TRMNAT IMPLIMENTS A TWO-STEP CALL TO TRMNAT2.
ADDING THE ADDRESSES OF GLOBAL AREAS TO THE
PARAMETER LIST (IBM COBOL DOESN'T ALLOW EXTERNAL
DATA AREAS).

ARGUMENTS:

A = CHAR *

INCLUDE FILES:

APINME - API GLOBAL NAME DATA.
APIEVN - NTM EVENT BLOCKS.

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ROUTINES CALLED:

APACCT
TRMNAT2 - TERMINATE AN AP'S CONNECTION TO THE IISS.

CALLED DIRECTLY BY:

RCLE - REMOTE COMPILE AND LINK EXPERT DRIVER

USED IN MAIN PROGRAM(S):

RCLE - REMOTE COMPILE AND LINK EXPERT DRIVER

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NTM/SERV Module Documentation

NAME: TRMNAT2
PURPOSE: TERMINATE AN AP'S CONNECTION TO THE IISS.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: TRMNAT2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

-

ARGUMENTS:

USER-TERMINATE-STATUS = DSPLY [X]
API-GLOBAL-NAME-SEC = RECRD
HOT-MBX-EVENT-BLK = DSPLY [X(2032)]
COLD-MBX-EVENT-BLK = DSPLY [X(2032)]
SEND-EVENT-BLK = DSPLY [X(2032)]
ACK-MBX-EVENT-BLK = DSPLY [X(2032)]
TIMER-EVENT-BLK = DSPLY [X(80)]

INCLUDE FILES:

ADMSGH - THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
APILCL - THE APIS COMMON LOCAL DATA.
SRVCDS - SERVICE CODES FOR THE NTM SERVICE ROUTINES.
RETSTR - THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
APINME - API GLOBAL NAME DATA.
APIEBV - NTM EVENT BLOCKS.
ERRPRO - PROCESS ERROR INCLUDE FILE

ROUTINES CALLED:

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DELMBX
ENDRUN
SNDMSG
SETTIM
WAIT01
RELEVB
ERRPRO

CALLED DIRECTLY BY:

TRMNAT - CALL TRMNAT2

USED IN MAIN PROGRAM(S):

RCLE - REMOTE COMPILE AND LINK EXPERT DRIVER

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NTM/SERV Module Documentation

NAME: TRMNAX
PURPOSE: CALL TRMNAX2
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: INT ()
SOURCE FILE: TRMNAX
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

SYNOPSIS

CALL TRMNAX USING USER-TERMINATE-STATUS.

INPUTS/OUTPUTS:

INPUTS:
USER-TERMINATE-STATUS PIC X.

OUTPUTS:

DESCRIPTION

TRMNAX IMPLIMENTS A TWO-STEP CALL TO TRMNAX2,
ADDING THE ADDRESSES OF GLOBAL AREAS TO THE
PARAMETER LIST (IBM COBOL DOESN'T ALLOW EXTERNAL
DATA AREAS).

ARGUMENTS:

A = CHAR *

ROUTINES CALLED:

APACCT
TRMNAX2 - TERMINATE COMM'S CONNECTION TO THE IISS.

NTM/SERV Module Documentation

NAME: TRMNAX2
PURPOSE: TERMINATE COMM'S CONNECTION TO THE IISS.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: TRMNAX2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

SINCE COMM DELETES ITS INPUT MAILBOX, TRMNAX HAS ONLY *
TWO FUNCTIONS. THEY ARE: SEND THE "AP DYING" MESSAGE *
TO THE COMM APC AND THEN CALL "ENDRUN" TO TERMINATE THE *
AP. *

ARGUMENTS:

USER-TERMINATE-STATUS = DSPLY [X]
MPU-INSTANCE = DSPLY [XX]

INCLUDE FILES:

ADMSGH - THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
RETSTR - THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
APILCL - THE APIS COMMON LOCAL DATA.
SRVCDs - SERVICE CODES FOR THE NTM SERVICE ROUTINES.
COMAPC - HARD CODED APC NAMES FOR COMM.
ERRPRO - PROCESS ERROR INCLUDE FILE

ROUTINES CALLED:

GETNAM
ENDRUN

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SNDMSG
SETTIM
WAIT01
RELEVB
ERRPRO

CALLED DIRECTLY BY:

TRMNAX - CALL TRMNAX2

USED IN MAIN PROGRAM(S):

TRMNAX - CALL TRMNAX2

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NTM/SERV Module Documentation

NAME: TSTMOD
PURPOSE: CALL COBOL ROUTINE TSTMOD2
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: INT ()
SOURCE FILE: TSTMOD
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

SYNOPSIS

CALL TSTMOD USING TEST-STATUS,
RETURN-CODE.

INPUTS/OUTPUTS:

INPUTS:

TEST-STATUS PIC X.

OUTPUTS:

RETURN-CODE PIC X(5).

DESCRIPTION

TSTMOD IMPLIMENTS A TWO-STEP CALL TO TSTMOD2,
ADDING THE ADDRESSES OF GLOBAL AREAS TO THE
PARAMETER LIST (IBM COBOL DOESN'T ALLOW EXTERNAL
DATA AREAS).

ARGUMENTS:

A = CHAR *
B = CHAR *

INCLUDE FILES:

APIEBV - NTM EVENT BLOCKS.

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ROUTINES CALLED:

APACCT
TSTMOD2 - SET/RESET THE TEST-MODE-FLAG.

NTM/SERV Module Documentation

NAME: TSTMOD2
PURPOSE: SET/RESET THE TEST-MODE-FLAG.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: TSTMOD2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

TSTMOD2 IS TO BE CALLED BY *
THE UI TO SET/RESET THE TEST-MODE-FLAG . WHEN SET *
THE UI WILL RECEIVE ASYNCHONOUS ERROR MESSAGES FOR *
THE USER IT IS SERVICING. WHEN THE TEST-MODE-FLAG *
IS OFF, THE ASYNCH ERROR MESSAGES WILL BE DISCARDED *

ARGUMENTS:

TEST-STATUS = DSPLY [X]

INCLUDE FILES:

SRVCD2 - SERVICE CODES FOR THE NTM SERVICE ROUTINES.
TSTMDE - TEST MODE FLAG.

CALLED DIRECTLY BY:

TSTMOD - CALL COBOL ROUTINE TSTMOD2

USED IN MAIN PROGRAM(S):

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TSTM0D - CALL COBOL ROUTINE TSTM0D2

NTM/SERV Module Documentation

NAME: WTHST
PURPOSE: CALL WTHST2
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: INT ()
SOURCE FILE: WTHST
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

SYNOPSIS

CALL WTHST USING REQ-AP-NAME,
AP-HOST-NAME,
RETURN-STATUS.

INPUTS/OUTPUTS:

INPUTS:

REQ-AP-NAME PIC X(10).

OUTPUTS:

AP-HOST-NAME PIC X(3).
RETURN-STATUS PIC X(5).

DESCRIPTION

WTHST IMPLIMENTS A TWO-STEP CALL TO WTHST2,
ADDING THE ADDRESSES OF GLOBAL AREAS TO THE
PARAMETER LIST (IBM COBOL DOESN'T ALLOW EXTERNAL
DATA AREAS).

ARGUMENTS:

A = CHAR *
B = CHAR *
C = CHAR *

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INCLUDE FILES:

APINME - API GLOBAL NAME DATA.
BUFAPI - API GLOBAL BUFFER DATA.
APIEBV - NTH EVENT BLOCKS.

ROUTINES CALLED:

APACCT
WHTHST2 - RETURNS THE NAME OF THE HOST ON WHICH AN AP
 RESIDES.

NTM/SERV Module Documentation

NAME: WTHST2
PURPOSE: RETURNS THE NAME OF THE HOST ON WHICH AN
AP RESIDES.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: WTHST2
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: SERVICES
DOCUMENTATION GROUP: NTMSERV

DESCRIPTION:

ACCEPTS AN AP NAME FROM A REQUESTING AP AND RETURNS
THE NAME OF THE HOST ON WHICH THE SPECIFIED AP RESIDES.
IF THE INFO IS NOT FOUND, AN UNSUCCESSFUL STATUS CODE
IS RETURNED TO THE CALLING AP.
-

ARGUMENTS:

REQ-AP-NAME = DSPLY [X(10)]
AP-HOST-NAME = DSPLY [X(3)]
RETURN-STATUS = DSPLY [X(5)]
API-GLOBAL-NAME-SEC = RECRD
API-GLOBAL-BUFFER-SEC = RECRD
HOT-MBX-EVENT-BLK = DSPLY [X(2032)]
COLD-MBX-EVENT-BLK = DSPLY [X(2032)]
SEND-EVENT-BLK = DSPLY [X(2032)]
ACK-MBX-EVENT-BLK = DSPLY [X(2032)]
TIMER-EVENT-BLK = DSPLY [X(80)]
TEST-MODE-FLAG = DSPLY [X]

INCLUDE FILES:

RETSTR - THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
SRVRET - NTM SERVICES STATUS CODES..
SRVCD2 - SERVICE CODES FOR THE NTM SERVICE ROUTINES.

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APINME	- API GLOBAL NAME DATA.
BUFAPI	- API GLOBAL BUFFER DATA.
APIEBV	- NTM EVENT BLOCKS.
TSTMDE	- TEST MODE FLAG.
ERRPRO	- PROCESS ERROR INCLUDE FILE

ROUTINES CALLED:

NSEND2 - SEND MESSAGE TO AN AP IN THE IISS.
RCV2 - RECEIVE MESSAGES FROM OTHER AP'S IN THE IISS .
ERRPRO

CALLED DIRECTLY BY:

WTHST - CALL WTHST2

USED IN MAIN PROGRAM(S):

WTHST - CALL WTHST2

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3.10.9 Include File Descriptions

The following list contains a purpose and description of each include file listed in 3.10.4 as specified in the source code. The language it is written in is also given.

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NTM/SERV Include File Description

FILE NAME: ADMSGH
PURPOSE: THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 8/20/84 INITIALIZE ALL LOCAL VARIABLES TO SPACES
OR 0
MODIFIED 5/24/85 CLEAN-UP.

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NTM/SERV Include File Description

FILE NAME: ALMSGH
PURPOSE: INITIALIZE LOCAL NTM-MESSAGE VARIABLES
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

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NTM/SERV Include File Description

FILE NAME: APCNM1
PURPOSE: APC GLOBAL NAME DATA.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 8/24/84 MSG-RCV-BUFFER TO OCCUR 20 TIMES.
MODIFIED 10/25/83 TO MOVE AP'S NUMBER OF MAILBOXES VALUE TO
TO THE SYSTEM STATE BLOCK.
RESTORED 11/22/83
MODIFIED 12/21/83 FOR ACK MAILBOX VALUES.
MODIFIED 1/30/84 FOR EXPANDED AP NAME.
MODIFIED 2/01/84 PARTITIONED FROM OLD APISEC.INC TO REDUCE
STORAGE IN SERVICES.
MODIFIED 7/05/84 REMOVED EXTERNAL FLAG. APM
MODIFIED 5/24/85 CLEAN-UP....6/3/85 CLEANUP CLEANED UP.
MODIFIED 6/14/85 PRONME CONTAINS ONLY APNAME AND INSTANCE

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NTM/SERV Include File Description

FILE NAME: APCNM2
PURPOSE: APC GLOBAL NAME DATA
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 10/06/83 TO INCLUDE INITEX-RES-NOT-AVAIL.
MODIFIED 11/02/83 TO INCLUDE WTHST- CODES.
MODIFIED 1/09/84 TO CHANGE ERROR CODES TO PIC X(5) AND TO
ELIMINATE ALPHA CHARACTERS.
MODIFIED 1/26/84 TO ADD SERVICE-SUCCESS (GENERIC) AND

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NTM/SERV Include File Description

FILE NAME: APIEBV
PURPOSE: NTM EVENT BLOCKS
LANGUAGE: C

DESCRIPTION:

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NTM/SERV Include File Description

FILE NAME: APIINI
PURPOSE: FOR INITIATION PURPOSES
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

28 jan 84 : changes for longer ap name

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WTH/SERV Include File Description

FILE NAME: APILCL
PURPOSE: THE APIS COMMON LOCAL DATA
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 8/24/83 TO UP THE SIZE OF MAX-IN-RCV-BUFFER FROM
10
TO 20.
MODIFIED TO ADD VALUES FOR SYSTEM COMMAND
CATEGORIES.

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NTM/SERV Include File Description

FILE NAME: APINME
PURPOSE: API GLOBAL NAME DATA
LANGUAGE: C

DESCRIPTION:

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NTM/SERV Include File Description

FILE NAME: BUFAPI
PURPOSE: API GLOBAL BUFFER DATA
LANGUAGE: C

DESCRIPTION:

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NTM/SERV Include File Description

FILE NAME: COMAPC
PURPOSE: HARD CODED APC NAMES FOR COMM
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

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NTM/SERV Include File Description

FILE NAME: ERRPRO
PURPOSE: PROCESS ERROR INCLUDE FILE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

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NTM/SERV Include File Description

FILE NAME: FILES:
PURPOSE: AS THE RETURN GIVEN A TABLE-FULL ERROR
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 11/2/83 TO INCLUDE RET-CODE-5 *
MODIFIED 1/9/84 TO INCREASE ALL ERROR CODES TO PIC X(5) *
AND TO ELIMINATE ALPHA'S *
MODIFIED 1/26/84 TO ADD RET-CODE FOR GETUSR-NOT-SUCC *
SRV-SUCCESSFUL ADDED FOR GENERIC RETURN *
MODIFIED 2/7/84 TO ADD ERROR CODES FOR ENTRY-NOT-FOUND *
MODIFIED 2/8/84 TO ADD WHTHST-NOT-SUCCESSFUL *
MODIFIED 2/20/84 TO ADD TSTMOD NEW CODES. *

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NTM/SERV Include File Description

FILE NAME: INICMD
PURPOSE: INITIALIZATION MESSAGE FORMAT
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

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NTM/SERV Include File Description

FILE NAME: MSGSTR
PURPOSE: PURPOSE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 9/23/83 TO IDENTIFY ERROR CODES AS RETURNED VIA
SNDSAP. NOTE - NO NACK IS SENT - ALSO
CHANGED RESOURCE-FULL VALUE TO 33.
MODIFIED 10/06/83 TO ADD VALUE FOR SYSTEM STATE MESSAGE.
MODIFIED 11/22/83 RESTORED FROM HARD COPY.
MODIFIED 1/12/84 TO HANDLE FIVE CHAR ERROR CODE.
MODIFIED 1/30/84 FOR EXPANDED AP NAME.
MODIFIED 2/08/84 TO RECOGNIZE "J" AS A PAIRED MESSAGE.
MODIFIED 8/20/84 INITIALIZE ALL LOCAL VARIABLES TO SPACES
OR 0
MODIFIED 9/20/84 ADDED IBM NAMES TO NTMNAME. BCS APM
MODIFIED 5/24/85 CLEAN-UP.

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1 November 1985

NTM/SERV Include File Description

FILE NAME: OF
PURPOSE: AS THE RETURN GIVEN A TABLE-FULL ERROR
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 11/2/83 TO INCLUDE RET-CODE-5 *
MODIFIED 1/9/84 TO INCREASE ALL ERROR CODES TO PIC X(5) *
AND TO ELIMINATE ALPHA'S *
MODIFIED 1/26/84 TO ADD RET-CODE FOR GETUSR-NOT-SUCC *
SRV-SUCCESSFUL ADDED FOR GENERIC RETURN *
MODIFIED 2/7/84 TO ADD ERROR CODES FOR ENTRY-NOT-FOUND *
MODIFIED 2/8/84 TO ADD WTHST-NOT-SUCCESSFUL *
MODIFIED 2/20/84 TO ADD TSTMOD NEW CODES. *

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1 November 1985

NTM/SERV Include File Description

FILE NAME: RETSTR
PURPOSE: THE APIS COMMON LOCAL DATA FOR ERROR-RETURNS.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 8/20/84 INITIALIZE ALL LOCAL VARIABLES TO SPACES
OR 0
MODIFIED 5/24/85 CLEAN-UP.

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NTM/SERV Include File Description

FILE NAME: SRVCD2
PURPOSE: SERVICE CODES FOR THE NTM SERVICE ROUTINES
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

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NTM/SERV Include File Description

FILE NAME: SRVCDS
PURPOSE: SERVICE CODES FOR THE NTM SERVICE ROUTINES.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 10/06/83 TO INCLUDE INITEX-RES-NOT-AVAIL.
MODIFIED 11/02/83 TO INCLUDE WTHST- CODES.
MODIFIED 1/09/84 TO CHANGE ERROR CODES TO PIC X(5) AND TO
ELIMINATE ALPHA CHARACTERS.
MODIFIED 1/26/84 TO ADD SERVICE-SUCCESS (GENERIC) AND
GETUSR-NOT-SUCCESSFUL.
MODIFIED 2/07/84 TO ADD ERROR CODES FOR ENTRY-NOT-FOUND.
MODIFIED 5/24/85 CLEAN-UP.

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NTM/SERV Include File Description

FILE NAME: SRVRET
PURPOSE: AS THE RETURN GIVEN A TABLE-FULL ERROR
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 11/2/83 TO INCLUDE RET-CODE-5 *
MODIFIED 1/9/84 TO INCREASE ALL ERROR CODES TO PIC X(5) *
AND TO ELIMINATE ALPHA'S *
MODIFIED 1/26/84 TO ADD RET-CODE FOR GETUSR-NOT-SUCC *
SRV-SUCCESSFUL ADDED FOR GENERIC RETURN *
MODIFIED 2/7/84 TO ADD ERROR CODES FOR ENTRY-NOT-FOUND *
MODIFIED 2/8/84 TO ADD WTHST-NOT-SUCCESSFUL *
MODIFIED 2/20/84 TO ADD TSTMOD NEW CODES. *

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NTM/SERV Include File Description

FILE NAME: TSTMDE
PURPOSE: SPACES OR 0.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

3.10.10 Hierarchy Chart

The following hierarchy charts show the relationships between all of the modules mentioned in the above documentation. A module may call a subroutine several times within its code, but the call will only be shown once as a single relationship on this hierarchy chart. All modules shown at the top of the first page are considered Main Programs as described in section 3.10.1 above.

There is an internal paging scheme as marked by the numbers in the upper right corner of each page. An index after the last page of the chart shows where a routine and its calls are first defined. If a routine has no page reference, it either makes no calls or is an external routine. A continuation box on the end of a tree limb shows where that the tree continues on the page number mentioned. A number in a box with a routine name points to the page where the routine is further defined within the hierarchy tree. If there is no number in a box, the routine either makes no calls or is an external routine.

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1

+-----+	+-----+	+-----+	+-----+	+-----+
ASCTIM	CHGROL2	CHKMSG2	FILGEN	(CONT)
+---+---+	+-----2+	+-----3+	+---+---+	+-----4+
+-----+			+-----+	
+---+---+	+---+---+	+---+---+	+---+---+	+---+---+
SYS\$GETTIM	SYS\$ASCTIM	NSEND	RCV	ERRPRO
+---+---+	+---+---+	+---+---+	+---+---+	+---+---+

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2

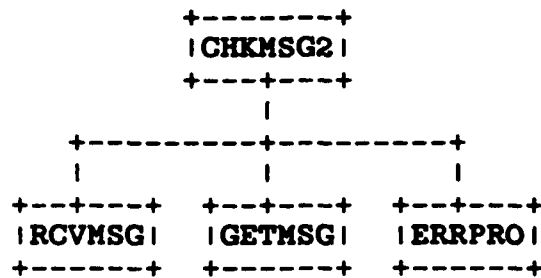
```

+-----+
|CHGROL2|
+-----+
|
+-----+
|           |
+-----+ +-----+
|NSEND2| |ERRPRO|
+-----+ +-----+
|
+-----+-----+-----+-----+-----+-----+
|           |           |           |           |           |
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+
|SNDMSG| |SETTIM| |WAITO1| |RCVMSG| |WAITO2| |(CONT)|
+-----+ +-----+ +-----+ +-----+ +-----+ +-----5+

```

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3



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4

```
+-----+ +-----+ +-----+ +-----+ +-----+
|(CONT)| |GDACK2| |GDSEND2| |GETTIM| |(CONT)|
+-----1+ +-----+ +-----6+ +-----+ +-----7+
      |
      +-----+
      |         |
+-----+ +-----+ +-----+
|NSEND2| |ERRPRO| |SYS$GETTIM|
+-----2+ +-----+ +-----+
```

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5

```

      +-----+
      | NSEND2 |
      +-----+
        |
+-----+-----+-----+-----+-----+
|         |         |         |         |
+-----+ +-----+ +-----+ +-----+ +-----+
| (CONT) | | GETMSG | | CNLTIM | | RELEV B | | ERRPRO |
+-----+ +-----+ +-----+ +-----+ +-----+
      -2-

```

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6

```
      +-----+  
      |GSEND2|  
      +-----+  
      |  
+-----+  
|         |         |         |         |         |  
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+  
|SNDMSG| |SETTIM| |WAIT01| |RCVMSG| |WAIT02| |(CONT)|  
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+  
                                         8
```

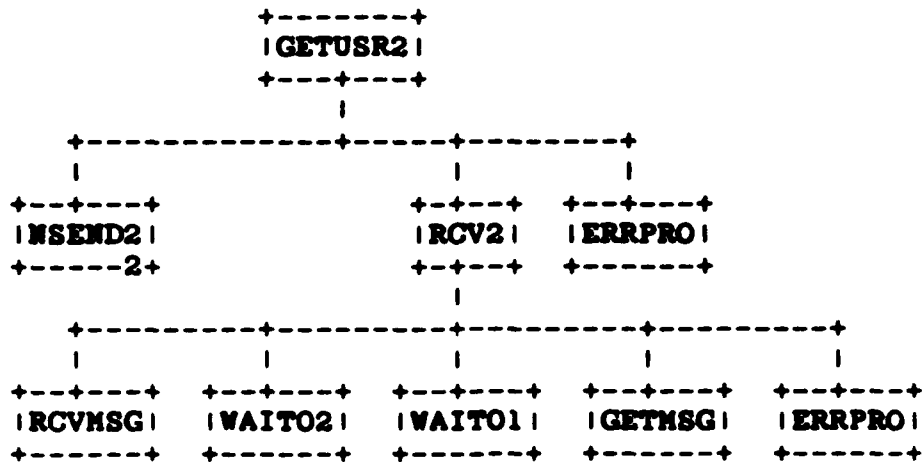

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7

+-----+	+-----+	+-----+	+-----+	+-----+
(CONT)	GETUSR2	INICOM2	INITIAL2	(CONT)
+-----4+	+-----9+	+-----10+	+-----11+	+-----12+

8

3 - 154



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10

```

+-----+
| INICOM2 |
+-----+
      |
+-----+-----+-----+-----+-----+-----+
|         |         |         |         |         |         |
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+
| GETNAM | | CRTMBX | | SNDMSG | | SETTIM | | WAITO1 | | (CONT) |
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+

```

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11

```
+-----+  
|INITAL2|  
+-----+  
|  
+-----+  
| | | | | |  
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+  
|LOCKEF| |GETNAM| |CRTMBX| |RCVMSG| |SETTIM| |(CONT)|  
+-----+ +-----+ +-----+ +-----+ +-----+ +-----14+
```

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12

+-----+	+-----+	+-----+	+-----+	+-----+
(CONT)	INITEX2	INITIL2	ISEND2	(CONT)
+-----7+	+-----15+	+-----16+	+-----17+	+-----18+

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13

```
      +-----+  
      | INICOM2 |  
      +-----+  
      |  
+-----+-----+-----+-----+  
|         |         |         |         |  
+-----+ +-----+ +-----+ +-----+ +-----+  
| (CONT) | | RCVMSG | | WAIT02 | | GETMSG | | ERRPRO |  
+-----+ +-----+ +-----+ +-----+ +-----+  
| -10    | |         | |         | |         | |         |
```

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14

```

+-----+
|INITAL2|
+-----+
|
+-----+-----+-----+-----+-----+
|         |         |         |         |         |
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+
|(CONT)| |WAITO2| |GETMSG| |SNDMSG| |WAITO1| |(CONT)|
+-----11+ +-----+ +-----+ +-----+ +-----19+
```


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15

```
      +-----+
      | INITEX2 |
      +-----+
      |
+-----+-----+-----+-----+-----+
|         |         |         |         |         |
+-----+ +-----+ +-----+ +-----+ +-----+
| GETNAM | | CRTMBX | | SNDMSG | | SETTIN | | WAITO1 | | (CONT) |
+-----+ +-----+ +-----+ +-----+ +-----+
                                     +-----20+
```

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16

```
      +-----+  
      |INITIL2|  
      +-----+  
      |  
+-----+-----+-----+-----+-----+-----+  
|         |         |         |         |         |         |  
+---+---+ +---+---+ +---+---+ +---+---+ +---+---+ +---+---+  
|GETNAM| |CRTMBX| |RCVMSG| |SETTIM| |WAIT02| |(CONT)|  
+---+---+ +---+---+ +---+---+ +---+---+ +---+---+ +---+---+  
+-----+-----+-----+-----+-----+-----+  
+-----21+
```

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17

```
      +-----+  
      |ISEND2|  
      +-----+  
      |  
+-----+  
|         |         |         |         |         |  
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+  
|SNDMSG| |SETTIM| |WAITO1| |RCVMSG| |WAITO2| |(CONT)|  
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+  
                                         -22+
```

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18

+(-----+ (CONT) +-----12+	+(-----+ LOGOFF2 +-----+-----+	+(-----+ LOGON2 +-----23+	+(-----+ MBXLOG +-----+-----+	+(-----+ QSEND2 +-----24+	+(-----+ (CONT) +-----25+
	+(-----+-----+ 				
+(-----+ NSEND2	+(-----+ ERRPRO		+(-----+ GETNAM		
+-----2+	+-----+		+-----+		

PS 620142300
1 November 1985

19

```
      +-----+  
      |INITAL2|  
      +-----+  
      |  
+-----+-----+-----+-----+  
|         |         |         |         |  
+---+---+ +---+---+ +---+---+ +---+---+  
| (CONT) | |DELMBX| |RELEVB| |ERRPRO|  
+---+---+ +---+---+ +---+---+ +---+---+  
| 14 |
```

PS 620142300
1 November 1985

20

```

+-----+
| INITEI2 |
+-----+
|
+-----+-----+-----+-----+-----+
| | | | | |
+-----+-----+-----+-----+-----+
| (CONT) | RCVMSG | WAITO2 | GETMSG | DELMBX | ERRPRO |
+-----+-----+-----+-----+-----+
| 15 | | | | | |

```

PS 620142300
1 November 1985

21

```

+-----+
|INITIL2|
+-----+
|
+-----+
|         |         |         |         |         |
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+
| (CONT) | |GETMSG| |SNDMSG| |WAIT01| |DELMBX| | (CONT) |
+-----16+ +-----+ +-----+ +-----+ +-----+ +-----26+
```

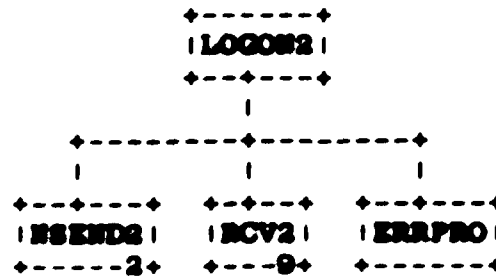
PS 000142300
1 November 1985

22

```
      +-----+  
      |ISEND2|  
      +-----+  
      |  
+-----+  
|         |         |         |         |  
+-----+ +-----+ +-----+ +-----+ +-----+  
| (CONF) | |GETMSG| |CHLTIN| |RELEVB| |ERRPRO|  
+-----+ +-----+ +-----+ +-----+ +-----+  
|---17+  |         |         |         |         |  
+-----+ +-----+ +-----+ +-----+ +-----+
```


PS 620142300
1 November 1965

23



PS 620142300
1 November 1985

24

```

+-----+
| QSEND2 |
+-----+

```

```

+-----+-----+-----+-----+-----+-----+
|      |      |      |      |      |      |
+-----+-----+-----+-----+-----+-----+
|ENDMSG| |SETTIM| |WAITO1| |RCVMSG| |WAITO2| |(CONT)|
+-----+-----+-----+-----+-----+-----+

```

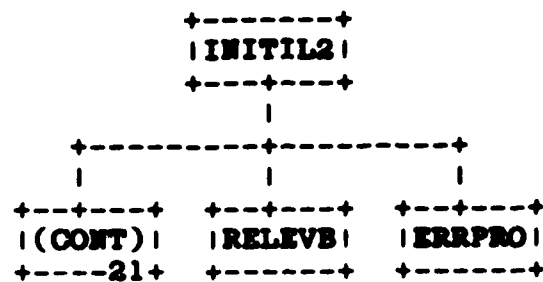
PS 620142300
1 November 1985

25

+-----+	+-----+	+-----+	+-----+	+-----+	+-----+
(CONT)	RCLE	SIGABT2	SIGERR	SNDRCLE	(CONT)
+-----18+	+--28+	+-----29+	+-----29+	+-----30+	+-----30+
		+-----+		+-----+	
		+-----+	+-----+	+-----+	
		NSEND2	ERRPRO	ISEND	
		+-----2+	+-----+	+-----+	

PS 620142300
1 November 1965

26



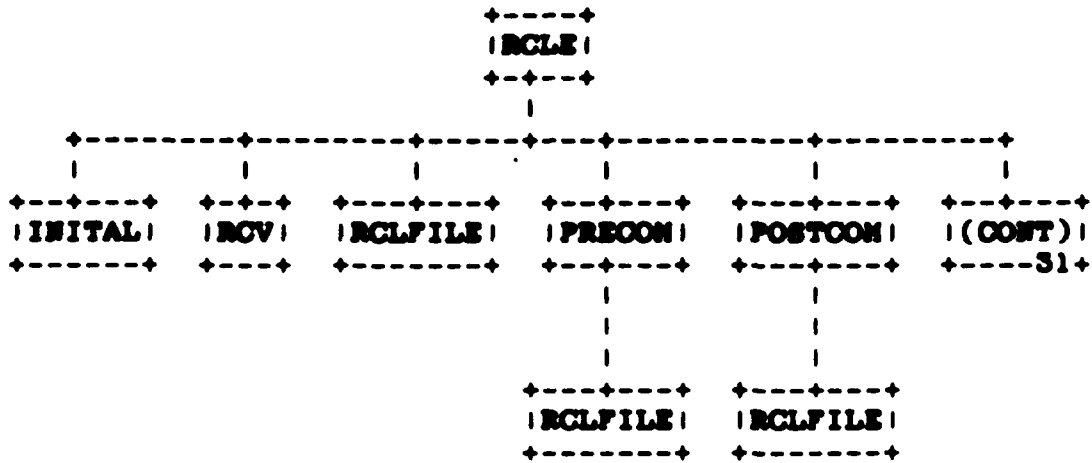
PS 620142300
1 November 1985

27

```
      +-----+
      |QSEND2|
      +-----+
        |
+-----+-----+-----+-----+
|         |         |         |         |
+-----+ +-----+ +-----+ +-----+ +-----+
| (CONT) | |GETMSG| |CULTIM| |RELEV| |ERRPRO|
+-----+ +-----+ +-----+ +-----+ +-----+
|  -24  | |         | |         | |         | |         |
+-----+ +-----+ +-----+ +-----+ +-----+
```

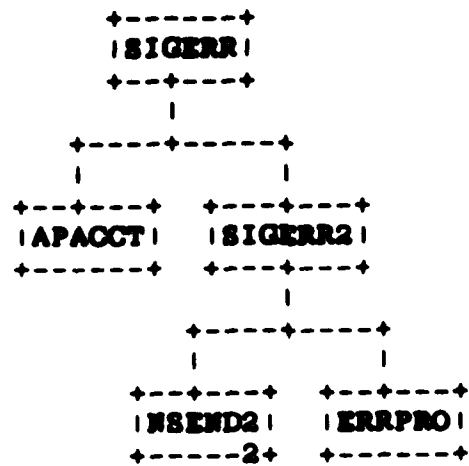
PS 620142300
1 November 1985

28



PS 620142300
1 November 1985

29



PS 620142300
1 November 1985

30

(CONT)	TRMMAX	TSTMOD	WTHST
25	32		33

|

APACCT	TSTMOD2
--------	---------

PS 620142300
1 November 1985

31

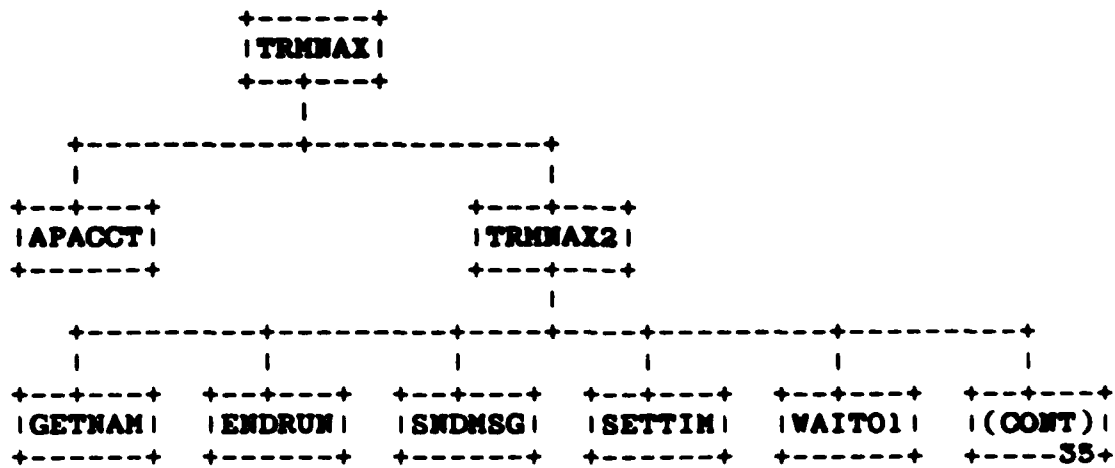
```

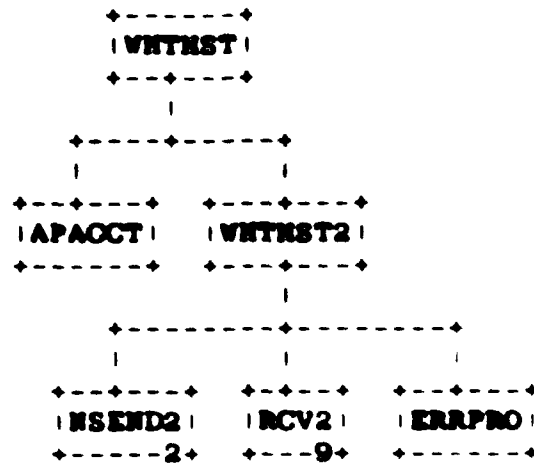
      +-----+
      |RCLE|
      +-----+
      |
+-----+-----+-----+-----+
|         |         |         |         |
+-----+ +-----+ +-----+ +-----+ +-----+
| (CONT) | |SYS$GETJPI| |SYS$CREPRC| |SETTIM| | (CONT) |
+-----28+ +-----+ +-----+ +-----+ +-----34+

```

PS 620142300
1 November 1985

32





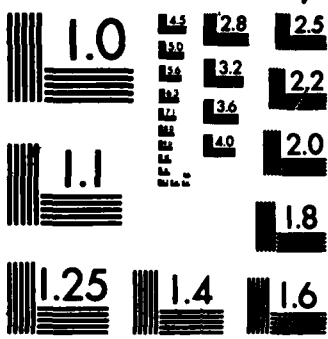
PS 620142300
1 November 1985

34

```
      +-----+  
      |RCLE|  
      +-----+  
      |  
+-----+-----+-----+-----+  
|      |      |      |      |      |  
+-----+-----+-----+-----+  
|(CONT)| |WAIT01| |NSEND| |TRMNAT| |ERRPRO|  
+-----31+ +-----+ +-----+ +-----36+ +-----+
```

AD-A102 062 INTEGRATED INFORMATION SUPPORT SYSTEM (IISS) VOLUME 6 3/3
NETWORK TRANSACTION. (U) GENERAL ELECTRIC CO
SCHENECTADY NY PRODUCTION RESOURCES CONSU. R RABBIN
UNCLASSIFIED 01 NOV 85 PS-620142300 F/G 12/7 NL

■ ■ ■ ■ ■ ■ ■ ■ ENL
8 87
DTIC



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

PS 620142300
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35

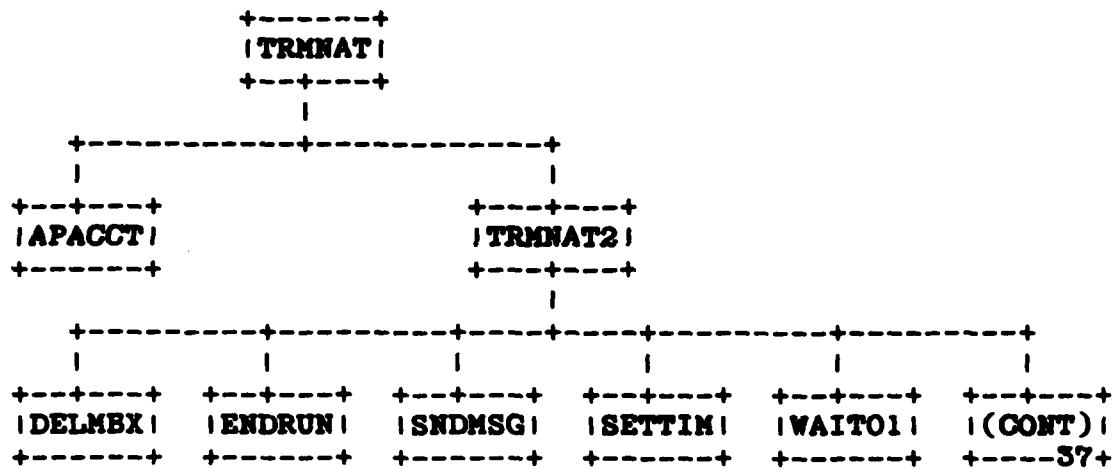
```

+-----+
|TRMNAX2|
+-----+
|
+-----+-----+
|               |               |
+-----+ +-----+ +-----+
| (CONT) | |RELEV| |ERRPRO|
+-----+ +-----+ +-----+
| 32+    |

```

PS 620142300
1 November 1985

36



PS 620142300
1 November 1985

37

```
      +-----+
      |TRMNAT2|
      +-----+
        |
    +-----+
    |         |
    |         |         |
+---+---+ +---+---+ +---+---+
| (CONT) | |RELEVB| |ERRPRO|
+---36+ +---+---+ +---+---+
```

PS 620142300
1 November 1985

APAOCT		SYS\$GETTIM	
ASCTIM.....1		TRMNAT.....36	
CHGROL2.....2		TRMNAT2.....36	
CHKMSG2.....3		TRMNAX.....32	
CMLTIM		TRMNAX2.....32	
CRTMBX		TSTMOD.....30	
DELMBX		TSTMOD2	
ENDRUN		WAIT01	
ERRPRO		WAIT02	
FILGEN.....1		WTHST.....33	
GDACK2.....4		WTHST2.....33	
GDSEND2.....6			
GETMSG			
GETNAM			
GETTIM.....4			
GETUSR2.....9			
INICOM2.....10			
INITAL			
INITAL2.....11			
INITEX2.....15			
INITIL2.....16			
ISEND			
ISEND2.....17			
LOCKEF			
LOGOFF2.....18			
LOGON2.....23			
MBXLOG.....18			
NSEND			
NSEND2.....2			
POSTCOM.....28			
PRECOM.....28			
QSEND2.....24			
RCLE.....28			
RCLFILE			
RCV			
RCV2.....9			
RCVMSG			
RELEVB			
SETTIM			
SIGABT2.....25			
SIGERR.....29			
SIGERR2.....29			
SNDMSG			
SNDRCLE.....25			
SYS\$ASCTIM			
SYS\$CREPRC			
SYS\$GETJPI			

PS 620142300
1 November 1985

3.11 Program Listings Comments

This information is contained in the Module Descriptions in section 3.10.

SECTION 4

QUALITY ASSURANCE PROVISIONS

4.1 Introduction and Definitions

"Testing" is a systematic process that may be preplanned and explicitly stated. Test techniques and procedures may be defined in advance and a sequence of test steps may be specified. "Debugging" is the process of isolation and correction of the cause of an error.

"Antibugging" is defined as the philosophy of writing programs in such a way as to make bugs less likely to occur and when they do occur, to make them more noticeable to the programmer and the user. In other words, as much error checking as is practical and possible in each routine should be performed.

4.2 Computer Programming Test and Evaluation

The quality assurance provisions for test consists of the normal testing techniques that are accomplished during the construction process. They consist of design and code walk-throughs, unit testing, and integration testing. These tests are performed by the design team. Structured design, design walk-through and the incorporation of "antibugging" facilitate this testing by exposing and addressing problem areas before they become coded "bugs."

END

8-87

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